



सत्यमेव जयते

Ministry of Health & Family Welfare  
Government of India



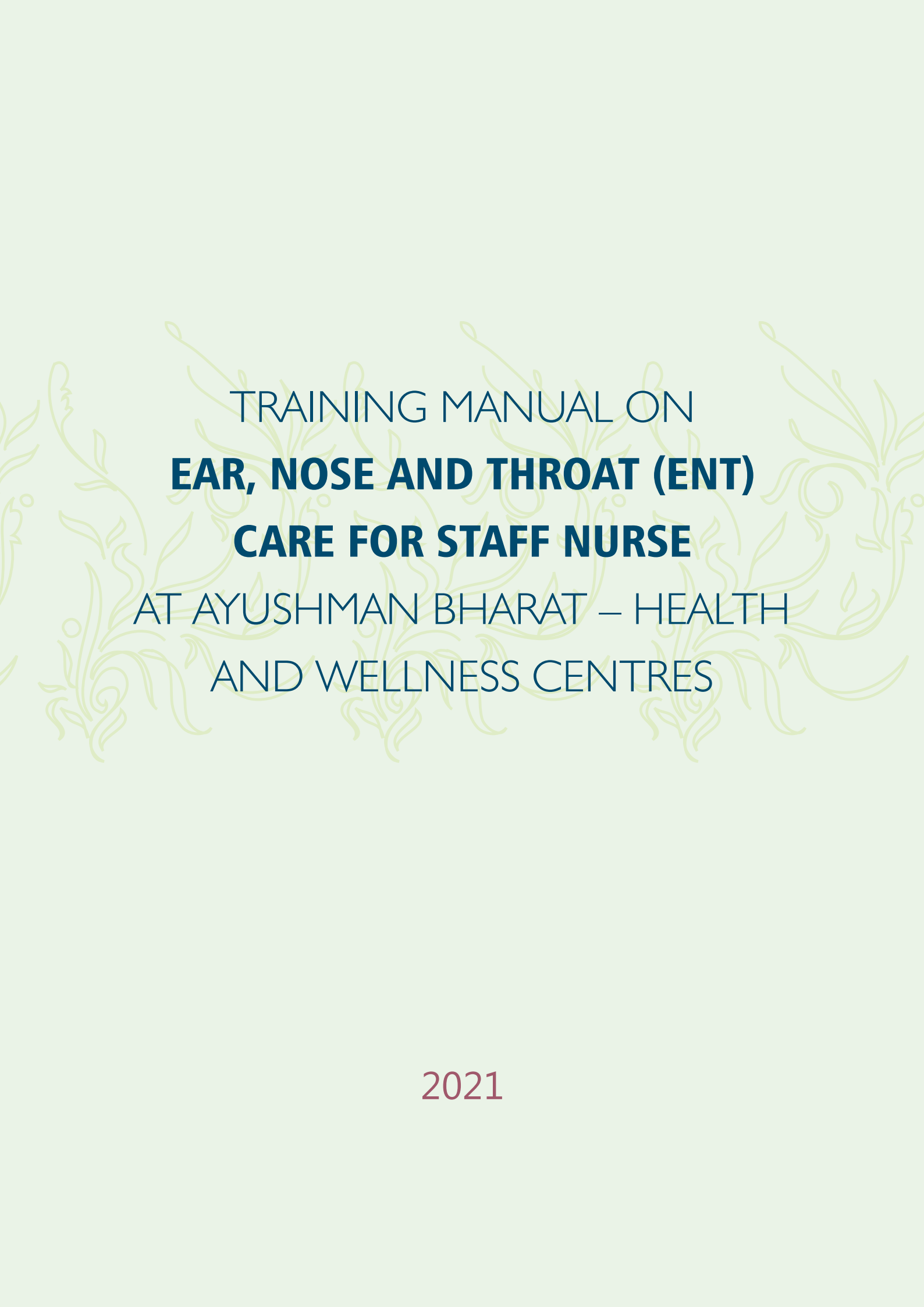
राष्ट्रीय स्वास्थ्य मिशन



# Training Manual on Ear, Nose and Throat (ENT) Care for Staff Nurse at Ayushman Bharat – Health and Wellness Centres







TRAINING MANUAL ON  
**EAR, NOSE AND THROAT (ENT)**  
**CARE FOR STAFF NURSE**  
AT AYUSHMAN BHARAT – HEALTH  
AND WELLNESS CENTRES

2021

## About this module

This module covers the basic and common Ear, Nose & Throat (ENT) conditions for which patients frequently visit Primary Health Care facilities. The frontline health care delivery personnel such as MPWs and ASHAs can play a very crucial role in identifying, managing and rolling out of preventive strategies for common ENT diseases in the community. They can also help to strengthen the continuum of care through regular follow ups of the patients suffering from various ENT conditions. Staff Nurse is the second in hierarchy at PHC-HWC after Medical Officer, who works under the guidance of the Medical Officer-In-Charge. Therefore, one important role of staff nurse is to comply with all the relevant orders given by the superiors to provide nursing care to the patients in order to achieve health goals.

In view of the emerging disease burden, the role of staff nurse has been expanded to enable her to address common ENT diseases, in addition to her traditional RCH-centric functions. For managing the ENT condition, it is very important to have basic knowledge about the common ENT diseases. This training module will help the staff nurses in understanding their roles, responsibilities and duties in providing basic ENT services at PHC-HWC.



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## *Abbreviations Used*

<b>S. No.</b>	<b>Abbreviation</b>	<b>Form</b>
1.	AC	Air Conduction
2.	ASOM	Acute Suppurative Otitis Media
3.	BC	Bone Conduction
4.	BD	Twice Daily
5.	BP	Blood Pressure
6.	BPPV	Benign paroxysmal positional vertigo
7.	CBC	Complete Blood Count
8.	CHC	Community Health Centre
9.	CHL	Conductive hearing loss
10.	CNS	Cranio Nervous System
11.	CPHC	Comprehensive Primary Health Care
12.	CSOM	Chronic Suppurative Otitis Media
13.	CT	Computed Tomography
14.	CVS	Cardio Vascular System
15.	DH	District Hospital
16.	ESR	Erythrocyte Sedimentation Rate
17.	FB	Foreign Body
18.	Hb	Haemoglobin
19.	HIV	Human immunodeficiency virus
20.	IEC/BCC	Information Education Communication/Behaviour Change Communication
21.	NSSO	National Sample Survey Office
22.	OPD	Outpatient department
23.	PCM	Paracetamol
24.	PHC	Primary Health Centre
25.	PHC-HWC	Primary Health Centre- Health and Wellness Centres
26.	PM-JAY	Pradhan Mantri Jan Arogya Yojana
27.	RBS	Random Blood Sugar
28.	SHC	Sub Health Centre
29.	SHC-HWC	Sub Health Centre- Health and Wellness Centre
30.	SN	Staff Nurse
31.	SNHL	Sensorineural hearing loss
32.	TDS	Three Times a Day
33.	TM	Tympanic Membrane
34.	UHC	Universal Health Coverage
35.	URTI	Upper Respiratory Tract Infections
36.	YLD	Years Lived with a Disability
37.	WHO	World Health Organization

# 01

## INTRODUCTION



The National Health Policy 2017 recommended strengthening the delivery of primary health care, through establishment of 'Health and Wellness Centres' as the platform to deliver comprehensive primary health care and called for a commitment of two thirds of the health budget to primary health care.

Ayushman Bharat or 'Healthy India' national initiative was launched as recommended by the National Health Policy 2017, to achieve the vision of Universal Health Coverage (UHC). This initiative has been designed on the lines as to meet SDG and its underlining commitment, which is 'leave no one behind'.

Ayushman Bharat is an attempt to move from sectoral and segmented approach of health service delivery to a comprehensive need-based health care service. Ayushman Bharat aims to undertake path-breaking interventions to holistically address health (covering prevention, promotion, and ambulatory care), at primary, secondary and tertiary level.

Ayushman Bharat adopts a continuum of care approach, comprising of two inter-related components, which are:

1. Establishment of Health and Wellness Centres
2. Pradhan Mantri Jan Arogya Yojana (PM-JAY)





## Health and Wellness Centres (HWCs)

In February 2018, the Government of India announced the creation of 1,50,000 Health and Wellness Centres (HWCs) by transforming existing Sub Centres and Primary Health Centres as the pillars of Ayushman Bharat. These centres would deliver Comprehensive Primary Health Care (CPHC), bringing health care closer to the homes of people, covering both maternal and child health services and non-communicable diseases, including free essential drugs and diagnostic services.

Health and Wellness Centres are envisaged to deliver an expanded range of services to address the primary health care needs of the entire population in their area, expanding access, universality, and equity close to the community. The emphasis of health promotion and prevention is designed to bring focus on keeping people healthy by engaging and empowering individuals and communities to choose healthy behaviour and make changes that reduce the risk of developing chronic diseases and morbidities. The delivery of Comprehensive Primary Health Care through HWC will increase the health system responsiveness to address the needs of community, especially most marginalised, through primary health care team.

### Expanded Services at PHC-HWC:

The expanded range of services would be delivered at both SHCs and in the PHCs, which are upgraded as HWCs. The level of complexity of care of services delivered at the PHC would be higher than the sub health centre level and this would be indicated in the care pathways and standard treatment guidelines issued periodically. Services are:

1. Care in pregnancy and childbirth
2. Neonatal and infant health care services
3. Childhood and adolescent health care services
4. Family planning, contraceptive services and other reproductive health care services
5. Management of communicable diseases including National Health Programmes
6. Management of common communicable diseases and outpatient care for acute simple illnesses and minor ailments.
7. Screening, prevention, control and management of non-communicable diseases
8. Care for Common Ophthalmic and ENT problems
9. Basic Oral health care
10. Elderly and Palliative health care services
11. Emergency Medical Services
12. Screening and basic management of mental health ailments

This module will deal with Care for Common ENT problems for SN

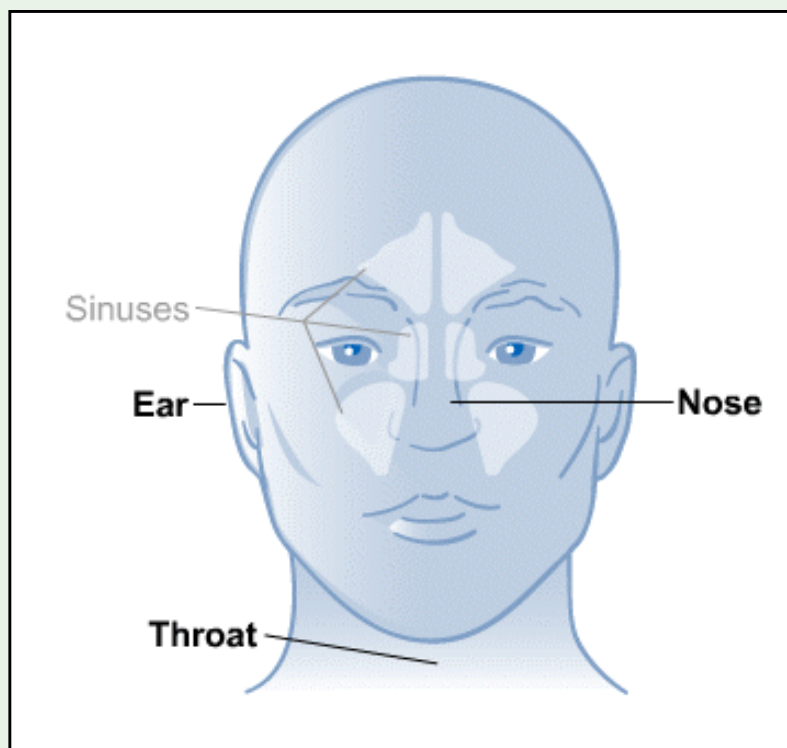
In this module, the term SN is used throughout the text



## Why A Separate Module for ENT Services

With availability of primary health care set-up as close as possible to the community, people can now access public health care facilities and consult health care functionaries during sickness and for follow-up visits. However, OPD services at these facilities were limited to RCH-centric services before the launch of HWC program. With the implementation of HWCs, the expanded services are being introduced at these primary health care facilities. Care for common ENT service is one of the expanded services which is available at HWCs.

Ear, nose, and throat (ENT) disorders are one of the common reasons for a visit to a primary care centre in both rural and urban communities across the country. The rural community of India is also currently bearing the rising burden of ENT diseases, where the prevalence of ENT disorders range from 4.3% to 11% in certain districts. Out of these, ear, nose and throat related disorders contribute to 60%, 27% and 13% burden respectively, thus making disorders leading to hearing loss a major public health concern. The common ear problems include ear wax (18.7%), Chronic Suppurative Otitis media (5.4%), dry perforation of Tympanic Membrane (0.6%), Congenital deafness (0.2%) and age-related hearing loss i.e. presbycusis (10.5 %).



# 02

## SERVICE DELIVERY FRAMEWORK AND ROLE OF STAFF NURSE

**A**s a Staff Nurse, it is important for you to be well acquainted with the knowledge and skills to provide ENT services in catchment area of your PHC- HWC. This module will help you to understand the range of services which would be provided at each level and strengthen the continuum of care and referral linkages.

Service delivery framework for ENT Services			
	Community Level	HWC	Referral Centre
Care for Common ENT problems	<ul style="list-style-type: none"><li>• Care of running nose</li><li>• Early identification and referral for common ENT problems</li><li>• Assisting the mobile health teams/RBSK for screening of congenital disorders and referral</li><li>• First aid for nosebleeds</li></ul>	<ul style="list-style-type: none"><li>• Management of Upper Respiratory Tract Infections, epistaxis, otomycosis, otitis externa, etc.</li><li>• Early detection of hearing impairment and deafness with referral</li><li>• First aid for injuries/ stabilisation and then referral</li><li>• Removal of foreign body, lodged superficially</li><li>• Identification and referral of thyroid swelling, discharging ear, blocked nose, hoarseness and dysphagia</li></ul>	<ul style="list-style-type: none"><li>• Management of all acute and chronic ear, nose and throat problems</li><li>• Surgical care for nose, throat and ear</li><li>• Diagnosis and management of hearing language, voice and speech impairment</li><li>• Pre-cochlear implant evaluation; switch-on and cochlear implant mapping</li><li>• Management including nasal packing for epistaxis, tracheostomy, foreign body removal</li></ul>

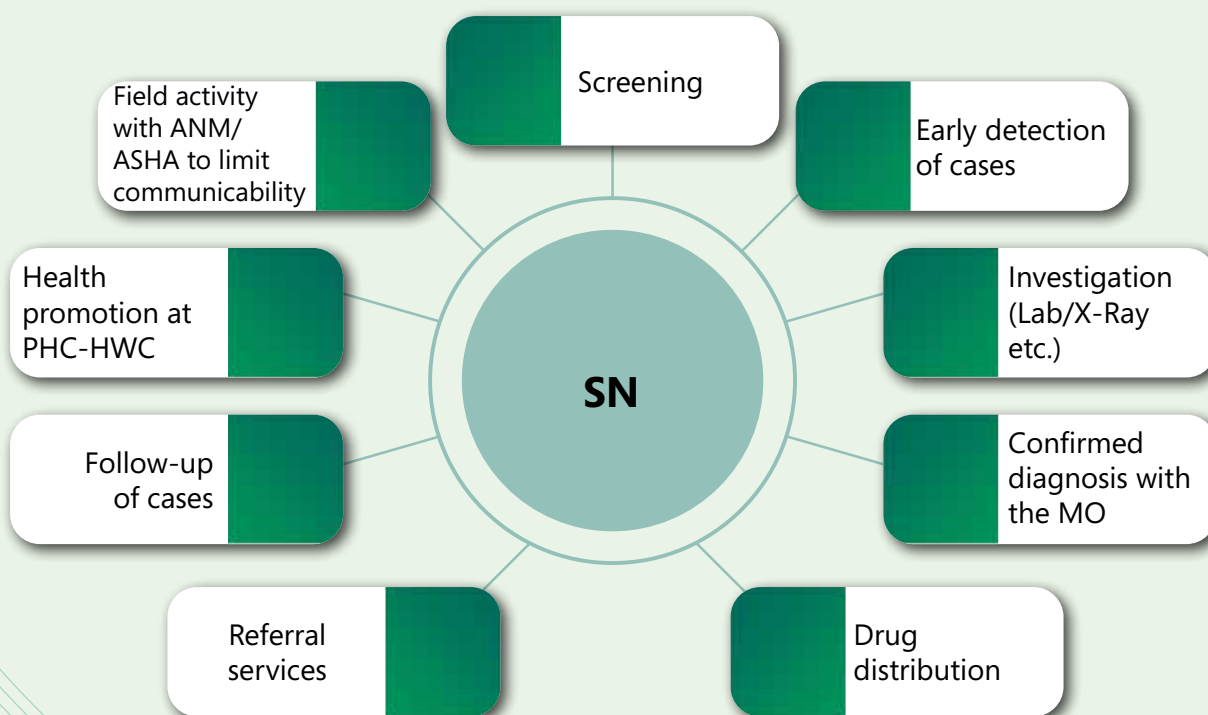
### Service delivery framework for ENT Services

	<b>Community Level</b>	<b>HWC</b>	<b>Referral Centre</b>
Screening and early detection	<p>Community-based new born screening at home through MPWs for new borns till six weeks of age, during home visits/ immunisation sessions using devices, which are approved for the Public Health interventions.</p> <p>For children from six weeks to 18 years – Anganwadi Centre (AWC)/ school-based screening will be undertaken through the Rashtriya Bal Swasthya Karyakram (RBSK).</p>	<p>Early detection of common problems related to ENT, including hearing impairment and deafness.</p> <p>Identification and referral of thyroid swelling, discharge from ear (wet ear), blocked nose, hoarseness and dysphagia.</p> <p>Undertake Otoscopy for ear discharge after Community Health Officers (CHO) are trained on its use.</p> <p>Diagnosis and management for common diseases like otomycosis, otitis externa, ear discharge, etc.</p>	<p>Organising screening camps as an outreach activity for vulnerable and marginalised community.</p> <p>Management of common ENT problems and of referred cases from Health and Wellness Centres (HWCs-SHC) and communities.</p>
Health promotion activities	<p>Educating community about healthy ENT habits.</p> <p>Awareness on protection against excessive noise, safe listening and improving the acoustic environment.</p> <p>Informing children and adults with ENT problems, family members and the general public about available options for their inclusion and integration in the community.</p>	<p>Educating community about healthy ENT habits.</p> <p>Promotion and implementation of immunisation, maternal and perinatal health care and child health care.</p>	<p>Advocacy for appropriate ENT services, including otological and audiological services, at health care facilities as close to the community as possible.</p>

## ROLES AND RESPONSIBILITIES OF A STAFF NURSE

As primary health care team is committed to provide quality comprehensive health care at PHC-HWC, staff nurse plays a crucial role in screening, early identification of cases, distribution of medicines and referral of patients suffering from common ENT conditions. In order to provide ENT services, it is important to consult Medical Officer at every possible step especially in severe cases. Diagnosis and treatment must be discussed with Medical Officer or doctor at higher centre before dispensing drug.

In any ENT condition before initiation of any antibiotic, always consult medical officer beforehand.



1. Screening/early identification of the most common ENT problems of the patients who report to PHC-HWC
2. Supporting and mentoring ASHA/MPW-F on preventive and promotive aspects of common ENT problem, early detection and primary management of common ENT problems, referral and follow up mechanism
3. Providing treatment to the patient with ENT problems in consultation with the Medical Officer of HWC
4. Assisting Medical Officer in basic ENT procedure
5. Providing follow up care to the patient who were referred to the higher centres to ensure that they have received complete care and, if on treatment, are complying with all the advice given to them. Long term follow up will be necessary for certain cases
6. Maintenance of records at PHC-HWC level



# 03

## NATIONAL PROGRAMME OR PREVENTION AND CONTROL OF DEAFNESS (NPPCD)

Taking note of the 6.3% prevalence of disabling hearing loss in India, the National Programme for Prevention and Control of Deafness (NPPCD) was launched by the Government of India on a pilot basis from August 2006 and formalised as a national programme in 2008. It has a vision to eliminate preventable deafness, reduce the total burden of deafness to less than 1% and empower the hearing-impaired to lead a socially and economically productive life, by 2030.

The focus of the programme is to generate awareness about ear and hearing problems and to provide services at the primary health care level. Awareness-generating activities are being undertaken through electronic and written media, and include person-to-person communication. Service delivery is strengthened through capacity-building, screening activities and referral system.

District hospitals have been upgraded with provision of diagnostic and surgical equipment as well as hearing aid fitting services. Additional human resources are employed at the district hospital, including an audiological assistant and a teacher for young hearing-impaired patients. As part of the programme, doctors at primary and community health centres are reoriented towards ear and hearing problems and provided with the basic diagnostic equipment for ear care.

The function of health care workers at various levels within the health care delivery system has been defined and trainings are oriented towards performance of the identified tasks with a focus on awareness generation in the community, early identification and referral. Training is based on WHO ear and hearing care manuals. Community-based camps and school screening activities through the school health system are a part of the programme. The programme also aims to strengthen existing intersectoral linkages for rehabilitation of persons with hearing loss.

### **Expected benefits of the Programme:**

- Availability of various services like prevention, early identification, treatment, referral, rehabilitation etc. for hearing impairment and deafness as the primary health centre/ community health centres/district hospitals largely cater to their need.
- Decrease in the number of hearing-impaired persons.

- Decrease in the severity/extent of ear morbidity or hearing impairment.
- Improved service network/referral system for the persons with ear morbidity/hearing impairment.
- Awareness creation among the health workers/grassroots level workers through the primary health centre medical officers and district health officers, which will percolate to the lower-level health workers functioning within the community.
- Capacity building at the district hospitals to ensure better care.

#### **Components of the Programme:**

- **Service provision**– Early detection and management of hearing and speech impaired cases and rehabilitation, at different levels of health care delivery system.
- **Manpower training and development**– For prevention, early identification and management of hearing impaired and deafness cases, training would be provided from medical college level specialists (ENT and Audiology) to grassroots level workers.
- **Capacity building** – For the district hospital, community health centres and primary health centre in respect of ENT/Audiology infrastructure.
- **Awareness generation through IEC/BCC activities**– For early identification of hearing impairment, especially in children so that timely management of such cases is possible and to remove the stigma attached to deafness/ hearing loss.



# 04

## IMPORTANCE OF HISTORY AND EXAMINATION

Like for other illness, the history in ENT is also of the utmost importance. The information obtained during this part of consultation will guide you towards particular areas during examination and indicate which investigations may be appropriate. This is essential for health provider (Staff Nurse) to come to the correct diagnosis with the help of Medical Officer wherever necessary. The interaction with the patient during history taking forms the foundation of a strong relationship between you and the patient.

### Components of history:

- *History of the present complaint:* This will include details of the main symptoms, their exact nature and duration, and any other associated or predisposing factors. Specific questions related to the system should also be asked at this point.
- *Past medical history:* Previous or concurrent medical conditions that are relevant to the current problem should be noted here. Details on self-reported conditions like diabetes, hypertension can be asked here.
- *Drug history:* Health provider must enquire about drugs that may be directly relevant to the present ENT complaint, e.g. anticoagulants in a patient with a nosebleed or the use of aminoglycosides in a patient with hearing loss. Also the health provider should determine whether the patient takes any other regular medication, prescribed or otherwise. A history of adverse drug reactions and allergies should also be taken.
- *Social history:* Details of the patient's occupation should be noted. In some cases, details of the patient's home environment may also be relevant. Alcohol intake and smoking history should also be determined.

### Important point to be noted while asking about:

#### Nose:

- A. Many patients complain of nasal obstruction. Try to determine whether this is unilateral or bilateral. Is it constant or intermittent? Are there associated features such as sneezing, nasal itch or allergy?
- B. If the patient complains of rhinorrhoea or postnasal drip, what is its quality (consistency) – watery, purulent?



- C. Features that may indicate sinus involvement in nasal pathology are pressure or pain in the cheeks, in the forehead or across the bridge of the nose with mild grade fever.
- D. Unilateral epistaxis or blood-stained nasal discharge, nasal obstruction/foreign body, facial pain or swelling, diplopia, history of snoring must be recognised as the common presenting features of nasal tumours.
- E. One should enquire about defects in the sense of smell, such as loss of smell (anosmia) and unpleasant odours (cacostmia).

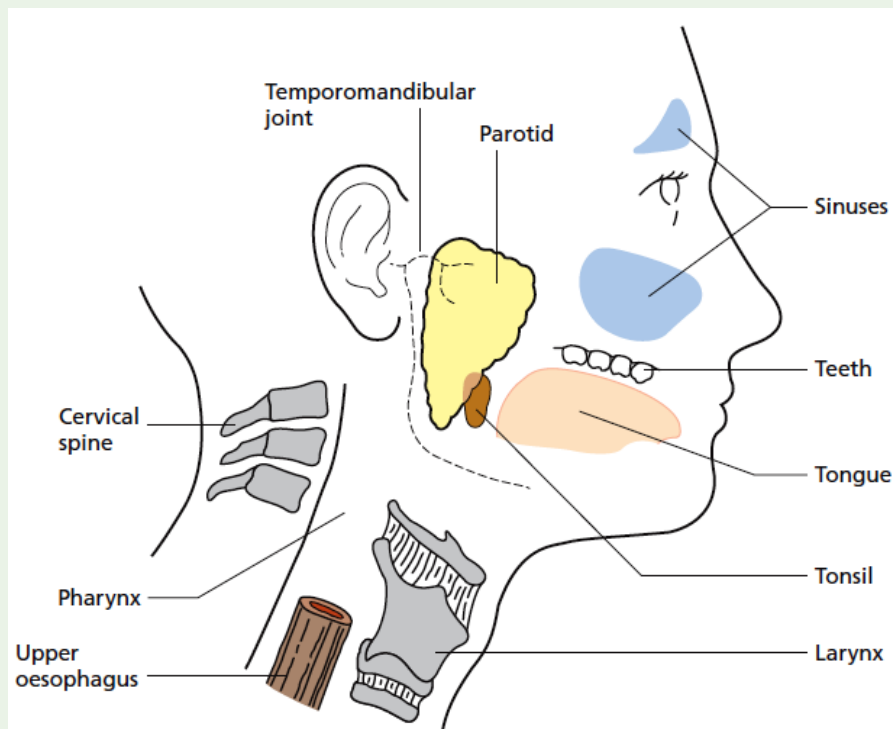
**Ear:**

- A. Hearing loss is the most common presenting complaint in diseases of the ear. Once again, a unilateral loss should raise the level of suspicion.
- B. Any history of previous noise exposure or family history of hearing problems may be relevant.
- C. In children with hearing problems, one should enquire about other congenital conditions, a history of birth or neonatal trauma and anoxia, and other serious childhood infections such as meningitis, history and details of medications received through intravenous route if any.
- D. Pain in the ear (otalgia) and/or discharge from the ear (otorrhoea) are also common symptoms, as is itch in the ears. The nature of any discharge from the ears should be determined. For example, is it simple wax, purulent, blood-stained or watery? Each of these may suggest a differing pathology. Foul-smelling otorrhoea may be characteristic of cholesteatoma, maggots in ear, impacted foreign body and rarely malignancy.
- E. Patients often complain of noises in the ears (tinnitus) and will often go into long and detailed descriptions of what they hear. Though much of this is not helpful in making the diagnosis, it is, however, important to recognise pulsatile tinnitus, which may occur with serious vascular tumours or malformations.
- F. Popping and cracking noises in the ears are suggestive of Eustachian tube dysfunction, as is a feeling of pressure within the ear.
- G. Dizziness with or without vomiting is another frequently encountered complaint usually associated with change in position. Here it is important to take a detailed history of its exact nature, any predisposing factors, associated symptoms and a general medical history. If after taking the history you do not have a suspected diagnosis, the examination and investigations are unlikely to give it to you.
- H. The facial nerve also supply taste buds; as a result, pathology may involve these structures and lead to an alteration in the sense of taste or facial weakness. Deviation of angle of mouth, and eye watering are other common symptoms. These are symptoms that must be enquired about directly, since the patient may fail to connect them with the ear and therefore may fail to share this vital information.

- I. The ear is also a common site for referred pain from many other sites within the head and neck due to their shared innervation like tooth, temporomandibular joint or throat.

**Throat:**

- A. While taking history from a patient who complains of a hoarse voice, it is important to determine the duration and circumstances that preceded this symptom. For example, did it occur following a common upper respiratory tract infection or after shouting at a match or after excessive worrying?
- B. Is it of gradual onset especially in a smoker? Smoking and alcohol intake are also important facts to document.
- C. The occupational history is important since it will determine whether the patient is a long-time voice user like school teachers who have to speak for long durations.
- D. Other common symptoms are feeling of a lump in the throat, mucus in the throat and discomfort. Often these symptoms are features of simple pathology. However, they may also be the presenting features of neoplasia.
- E. Acid reflux may also contribute to or cause throat problems, and, therefore, other features suggestive of this must also be sought.
- F. Sore throat and tonsillitis, along with intra-oral lesions such as ulcers on the tongue are the most common conditions of the mouth seen in ENT practice.
- G. It is important to ascertain a good general medical history, since a wide variety of systemic conditions such as anaemia and human immunodeficiency virus (HIV) infection can present with oral manifestations.
- H. In the case of swelling in the mouth, an increase in size or pain with eating is suggestive of salivary gland disease.
- I. Patients with lumps in the neck must be referred to an ENT specialist at a higher centre, since only the ENT specialist has the adequate equipment and expertise to examine the likely primary sites from which secondary neoplastic neck node deposits may originate. While taking history from such a patient, one must enquire about any symptom from the likely primary sites such as the tongue, mouth, nose and throat. A history of a preceding infection may be suggestive of a 'reactive' node. White patch over cheek mucosa should also be noted.
- J. Symptoms of weight loss, night sweats and malaise may suggest a systemic disease such as tuberculosis, lymphoma or acquired immunodeficiency syndrome (AIDS), features of thyroid over or underactivity.
- K. Facial asymmetry, facial fullness or facial swelling should also be noted.



**Note:** Only superficial examination with the help of torch needs to be done at the level of Staff Nurse. The likely sites of examination include oral cavity, external auditory canal and nasal cavity. These sites should be examined for:

1. Any kind of discharge (pus, clear fluid, blood etc.)
2. Any kind of foreign body – visible as it is or with help of torch
3. Any sign of inflammation i.e. redness, warmth, swelling, pain

⊙ Don'ts:

- Never use sharp object for examination
- Do not use ear drops without consulting a doctor
- Do no attempt removing ear wax if training is not done

# 05

## LIST OF COMMON ENT CONDITIONS

Some of the common ENT conditions which you may face at the PHC-HWC, including Hearing Loss, Otitis Media, Earache, Epistaxis, Tonsillitis, URTI, Vertigo, foreign body in Ear/Nose/Throat, etc. are described as following:

Condition	Clinical features	Brief Management
Epistaxis	Bleeding from the nose. May be classified as Anterior or Posterior depending upon site of bleeding.	<ul style="list-style-type: none"><li>- Pinching the nose</li><li>- Application of lignocaine and nor-epinephrine</li><li>- Assist MO in Nasal packing</li></ul>
Tonsillitis/ Pharyngitis	Sore throat, pain in swallowing, fever, change in voice. On examination tonsils appear to be swollen/ may be covered with exudates.	<ul style="list-style-type: none"><li>- Warm Saline Water gargles/betadine gargles</li><li>- Antibiotics such as Amoxicillin 500 mg TDS for 5 days</li><li>- T. Paracetamol 500 mg TDS for fever control</li><li>- Surgery may be indicated in few cases only (explained in a later section)</li></ul>
Sinusitis	Sneezing, running nose, cold, headache, mild-moderate fever, weakness.	<ul style="list-style-type: none"><li>- T. Paracetamol 500mg for reducing aches</li><li>- Steam inhalation</li><li>- Nasal decongestants drops</li></ul>
Otitis Externa	Pain in the ear, pruritus, aural fullness, hearing loss, copious ear discharge.	<ul style="list-style-type: none"><li>- Cleaning all discharges</li><li>- Topical Ear drops containing Chloramphenicol + Clotrimazole combination</li><li>- Oral antibiotics if condition is acute along with otitis media</li><li>- Patient should be referred to the higher centre in case of persistent pain</li></ul>

Condition	Clinical features	Brief Management
Otitis Media	Ear discharge, reduced hearing, irritability, fever. May be associated with neck rigidity, pus discharge from ears, severe headache, facial deviation.	Acute cases may be provided following medications- <ul style="list-style-type: none"> <li>- T. PCM 500mg TDS</li> <li>- Chloramphenicol/ciplox ear drops (2 drops) BD</li> <li>- T. Amoxicillin 500mg TDS</li> </ul> 0.1% Xylometazoline nasal drop (2 drops) Hot fomentation locally Dry heat over the ear Chronic cases of otitis media need to be evaluated by a specialist and therefore patient should be referred to the higher centre
Earache	Common in childhood. May be associated with ear discharge, hearing loss, tinnitus, facial deviations, dental pain, etc. depending on the underlying cause.	<ul style="list-style-type: none"> <li>- Evaluation for and treatment of underlying cause</li> <li>- For pain reduction: T. PCM 25-30 mg/kg/d in three divided doses.</li> <li>- Steam Inhalation</li> <li>- Ciplox ear drops, 2 drops at a time, 2-3 times a day in case ear infection along with discharge is suspected</li> </ul>
Vertigo	Dizziness, feeling of rotation/spinning, light-headedness, imbalance, fainting. May be associated with nausea, vomiting, tinnitus and ear ache.	<ul style="list-style-type: none"> <li>- Evaluation for and treatment of underlying cause</li> </ul> Avoid driving, swimming or any work demanding balance or use of machinery including farm machinery. <ul style="list-style-type: none"> <li>- T. Prochlorperazine 5mg BD OR Cinnarizine 25 mg TDS OR Betahistine 16 mg TDS</li> </ul>
Foreign body in Ear	History of foreign body entering the ear, ear fullness, ear pain, hearing loss, tinnitus, vertigo, etc.	<ul style="list-style-type: none"> <li>- Management depends on the size and nature of object and site of lodgement.</li> <li>- Manual Removal/syringing should be done by the trained staff only when the object is clearly visible, non-friable, superficial, blunt margins and absence of features suspected of perforation.</li> </ul>



Condition	Clinical features	Brief Management
Foreign body in Nose	History of Foreign body entering the nose, difficulty in breathing, discharge, nasal fullness and redness, pain etc.	<ul style="list-style-type: none"> <li>- Management depends on the size and nature of object and site of lodgement.</li> <li>- Manual removal can only be attempted if it is large, visible, not impacted and having blunt margins (spherical, ovoid) and there should be no active episode of bleeding, suppuration seen.</li> </ul>
Foreign body in Throat	Difficulty in breathing/choking, blood-stained discharge, pain in the neck/throat, may also be asymptomatic depending on the size and nature of the ingested item.	<p>If there is choking – give Heimlich’s manoeuvre and blows at the back under the guidance/observation of MO.</p> <p>If there is no choking, depending on the size and nature, the patient may be referred for appropriate centre of care.</p>



# 06

## EPISTAXIS

### Introduction:

Epistaxis, or bleeding from the nose, is a common complaint, especially during winters. In majority of cases, nosebleeds can be self-limiting and spontaneous, but it may be of significant concern if it is recurrent, massive or occurring in children.

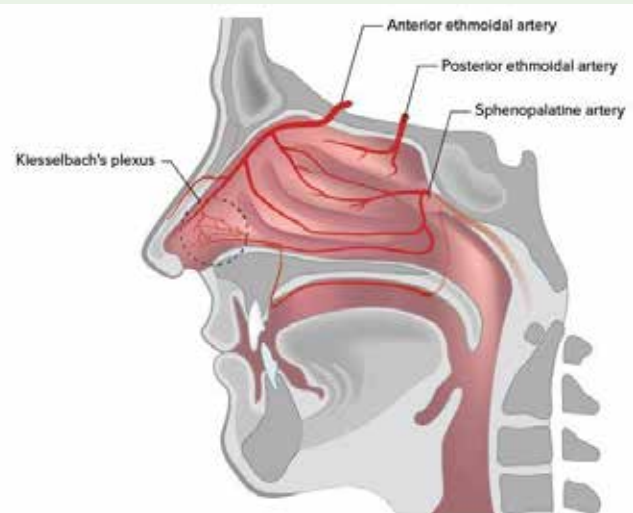
Based on the site of bleeding, it is classified as:

- a) **Anterior bleeds:** More common and relatively easier to control. Presents as bleeding from the nose.
- b) **Posterior bleeds:** Less common and may cause profuse bleeding, hence, more difficult to control. Posterior bleeds often present as bleeding from mouth

### Pathophysiology:

The nose has a rich vascular supply (as depicted in the figure). The Kiesselbach plexus, or Little's area, is an area in the anterior cartilaginous septum where a number of blood vessel connections (known as anastomosis) exist. This is the most common site for epistaxis.

Nosebleeds occur more frequently in the drier, colder months, and in less humid environments. This is because dry air facilitates excoriation and cracking of the nasal mucosa, vessel trauma, and subsequent epistaxis





**Causes:**

- a) Local causes: Trauma (finger nail trauma), mucosal irritation, nasal septal abnormality, inflammatory diseases, tumors
- b) Systemic causes: Certain blood disorder, hypertension (more common in adults), liver disease, kidney disease, some blood thinning drugs like aspirin, clopidogrel, warfarin, etc.
- c) Idiopathic or reason unknown

**Management of epistaxis:**

- a) History taking:

Ask for the following

- i. Duration of current episode
  - ii. Previous history of similar episodes
  - iii. History of trauma
  - iv. History of bleeding tendencies elsewhere
  - v. History of chronic liver disease
  - vi. History of any drug intake
  - vii. History of chronic alcohol intake
- b) Examination:
    - i. Site of bleeding
    - ii. Blood pressure
    - iii. Nasal septum deviation
  - c) Investigations
    - i. Complete Blood Count
    - ii. Coagulation Profile
    - iii. Blood group
    - iv. Radiological tests such as CT/MRI-scan (only in few cases)
  - d) Management of epistaxis:
    - Mild anterior epistaxis cases usually resolve with the primary care management (as listed below).

- Moderate to massive anterior bleeding as well as posterior nasal bleeds need specialised care and hence after initial stabilisation, must be referred to a facility with specialist for further management.

### **Primary management of epistaxis:**

- Relax the patient, make him sit upright with head slightly bent forward and measure his BP.
- Ask the patient not to blow through his nose.
- Assess whether the bleed is anterior or posterior.
- In case of anterior bleeds, pinch the soft parts of nose tightly for 10 mins.
- If bleeding doesn't stop, apply a combination of topical anaesthetic, such as 2% lidocaine and vasoconstrictor and wait for 10 mins. Soak cotton balls in a mix of 2% lidocaine and 1:1000 epinephrine. Put 1-2 cotton balls into the bleeding nostril. (If bleeding is not clearly unilateral, put cotton balls into both nostrils and apply pressure bilaterally.) Place a dry cotton ball at the external nares to prevent leakage and dripping. Leave the cotton balls in place for 10 minutes.
- If the bleeding still doesn't stop, or in case of posterior bleeds, pack the nose and refer to higher centre for appropriate care.
- Always give antibiotics in case of pack in nose and the pack should be removed after maximum 2 days as a rule.

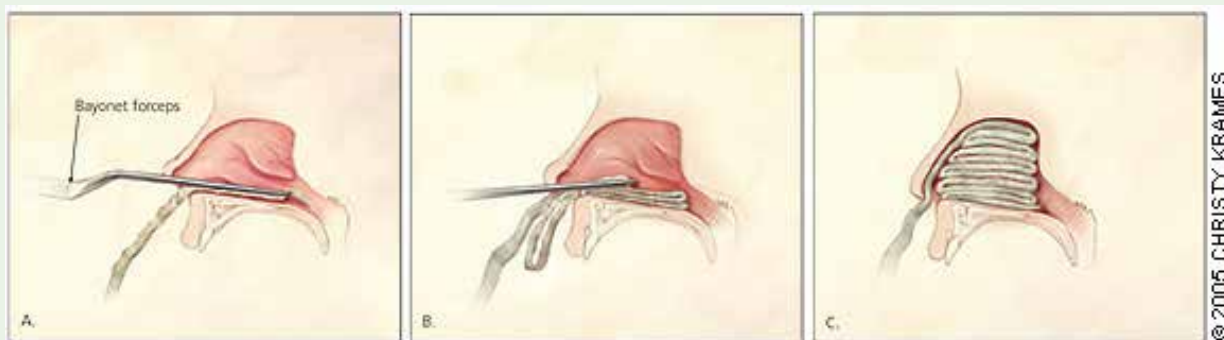
### **Anterior Nasal Packing of the nose:**

*Indication:* To control the nasal bleeds which are not controlled by pinching or application of vasoconstrictor

*Tools needed:* Gloves, lubricants such as petroleum jelly, gauze ribbon, nasal forceps, etc.

### **Procedure (to be done by a trained staff only or under guidance of a specialist):**

- Make the patient sit up with a back rest.
- Prepare a long ribbon gauze piece and smear it with abundant lubricant such as petroleum jelly.
- With the help of forceps, the gauze pieces have to be layered one upon each other, packing it from anterior to posterior, as depicted in the diagram below.
- The gauze should be placed as far posteriorly as is possible.
- Bilateral nasal packing may be considered in case unilateral packing fails to stop a confirmed and visualised anterior bleeding source. This would increase the pressure on the nasal septum.



### Anterior nasal packing:

- (A) Gripping gauze with forceps and inserted into the anterior nasal cavity
- (B) First packing layer is inserted along the floor of the ant. Nasal cavity
- (C) Additional layers of packing are added. Packing is continued until the anterior nasal cavity is filled

### Indications for referral:

- i. High BP at presentation
- ii. Epistaxis not controlled with local pressure for over 20 min
- iii. Massive blood loss
- iv. Bleeding following trauma to the face, with suspected facial fractures
- v. Other co morbidities requiring appropriate cross consultations
- vi. For posterior nasal packing in case of posterior epistaxis

### Follow up of cases

After the episode of nose bleed, it is important to follow up with the patient. If the case has been treated at the HWC, then the Staff Nurse can follow up after a week to see that the person has recovered. If the patient has high blood pressure, then this also needs to be followed up.

All cases that are referred to higher facilities must be followed up after treatment.

### Prevention of epistaxis

Some advice that can be given during health promotion activities to prevent nose bleeds include:

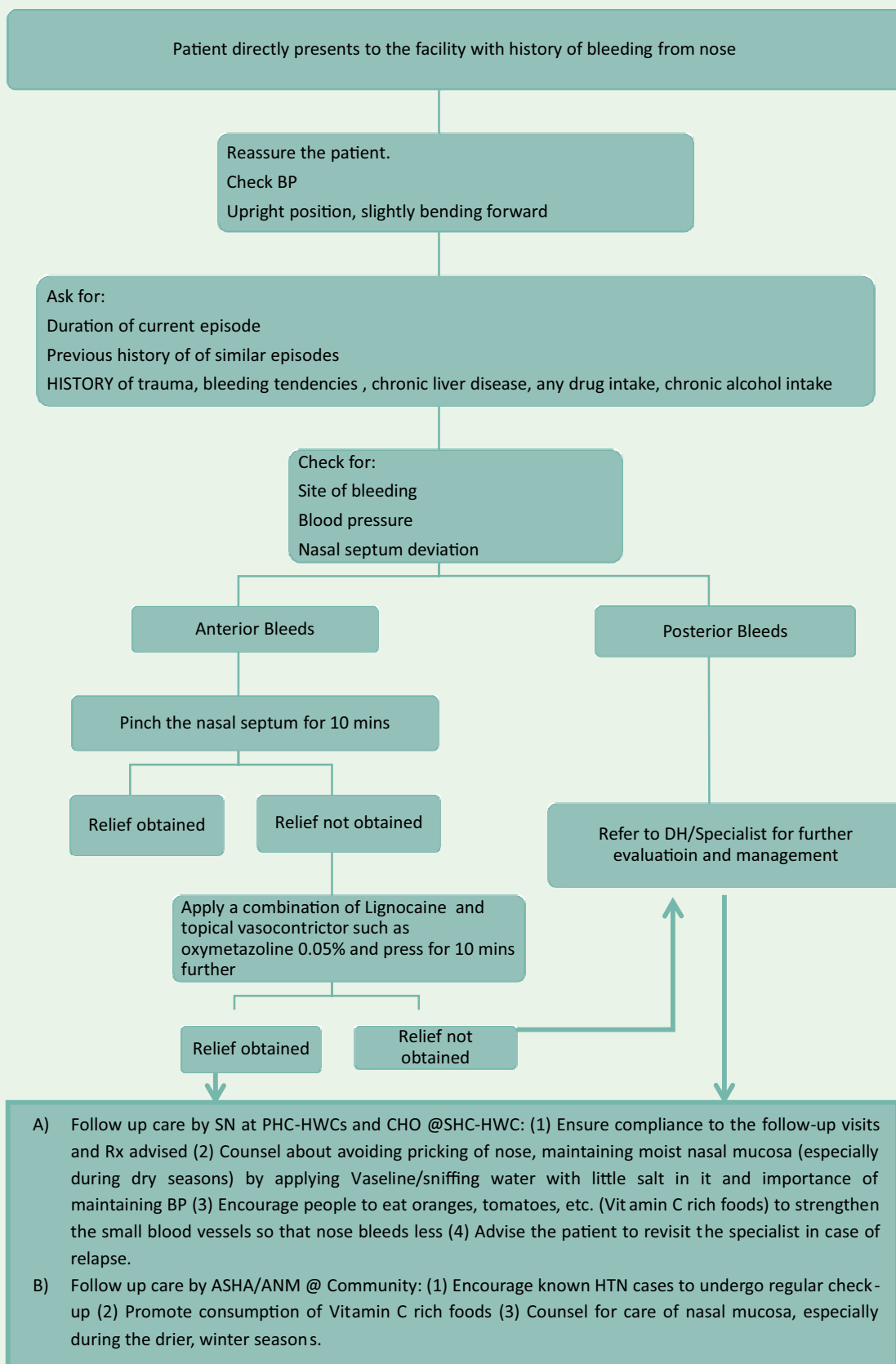
- Keep fingernails short to prevent injuring the nostrils
- Blow nose gently and without too much force
- In winter, can use a vaporiser in the room of the person prone to nose bleeds
- Apply a thin coating of petroleum jelly/coconut oil/ghee inside each nostril daily in the dry season to keep the inner lining moist

## ROLE OF THE STAFF NURSE IN NOSE BLEEDS

- Brief history, measure blood pressure regularly
- Maintaining the integrity of nasal mucosa by moistening it with petroleum jelly and avoiding pricking of nose
- Administer first aid for any case of nose bleeds brought to the centre
- Check for high blood pressure or any other injury
- After consulting with medical officer refer patient to higher centre (District Hospital/ CHC) if bleeding does not stop after 15 minutes, posterior epistaxis, any systemic feature associated
- Follow up of all cases that are referred or treated
- Keep record of all the cases and reports managed at PHC or referred in/out of PHC



## REFERRAL CARE PATHWAY FOR EPISTAXIS





# 07

## UPPER RESPIRATORY TRACT INFECTIONS

### Introduction:

Most people will develop an acute respiratory tract infection (RTI) every year. Upper respiratory tract infections (URTIs) are one of the most common reasons for seeking Out-Patient medical care, especially amongst children. Since vast majority of these infections are attributed to viral aetiology, the use of antibiotics to treat URIs is usually not recommended and symptom-based therapy represents the mainstay of treatment. However, certain conditions which warrant the use of antibiotics include:

- Patients with symptoms and signs suggestive of serious illness and/or complications (particularly pneumonia, mastoiditis, peritonsillar abscess, peritonsillar cellulitis, intra-orbital and intracranial complications)
- Patients at high risk of serious complications because of pre-existing comorbidity. This includes patients with significant heart, lung, renal, liver disease or young children who were born prematurely or malnourished children.
- Patients older than 65 years with acute cough and two or more of the following criteria, or older than 80 years with acute cough and one or more of the following criteria:
  - o hospitalisation in previous year
  - o type 1 or type 2 diabetes
  - o history of congestive heart failure

### Types of URTIs:

- Common Cold
- Sinusitis
- Rhinitis
- Pharyngitis
- Laryngitis

### Clinical features:

(a) Features of viral URTI:

- Fever
- Running nose, non purulent watery discharge
- Cough
- Hoarseness

(b) Features of rhinitis:

- Pruritus of the eyes, nose, palate, ears
- Running nose
- Sneezing
- Nasal congestion

(c) Features of pharyngitis\*:

- Sudden onset of sore throat
- Exudative tonsillitis
- Tender anterior cervical adenopathy
- Fever
- Absence of rhinorrhea, cough, hoarseness (less common feature)



\* Cases of sore throat, especially in children, are often caused by Group B Streptococci. These cases need prompt treatment with appropriate antibiotics as chronic infection with these bacteria can also affect the heart (causing Rheumatic heart disease) and kidneys (causing glomerulonephritis)

(d) Features of Sinusitis:

- Facial pain or sinus pain,
- Particularly aggravated by postural changes or by Valsalva manoeuvre
- Purulent nasal drainage
- Fever
- Nasal congestion



## Management:

As mentioned previously, most cases of URTIs will only need symptomatic treatment, if any. The decision on the use of antibiotics primarily depends on the clinical condition of the patient and, hence, a detailed history and thorough examination is necessary.

The patient should also be counselled about the following for treatment and prevention of these diseases: (ref: where there are no doctors)

- Drink plenty of water and get enough rest
- Sniff a little salt water into the nose, or breathe steam from hot water to clear the nose
- No special diet is needed. However, eating oranges, tomatoes, and other fruit containing vitamin C may help
- Injudicious use of antibiotics may cause more harm than benefit
- Contrary to popular belief, colds do not come from getting cold or wet (although getting very cold, wet, or tired can make a cold worse). A cold is 'caught' from others who have the infection and sneeze the virus into the air
- To keep from giving his cold to others, the sick person should eat and sleep separately — and take special care to be far away from small babies. He should cover his nose and mouth when he coughs or sneezes, and wash hands often if possible
- Simple medicine such as PCM helps lower temperature and relieve body aches and headaches. More expensive 'cold tablets' are no better
- Wipe a runny or stuffy nose, but try not to blow it. Blowing the nose may lead to earache and sinus infections
- Advise about the natural history of the disease and average total illness length:

- ✓ acute otitis media: 4 days
- ✓ acute sore throat/acute pharyngitis/acute tonsillitis: 1 week
- ✓ common cold: 1½ weeks
- ✓ acute rhinosinusitis: 2½ weeks
- ✓ acute cough/acute bronchitis: 3 weeks



Some medicines which are commonly used for the treatment of URTIs include:

- T. PCM 500 mg TDS (Adult) OR Syrup PCM 10-15mg/kg bodyweight in 2 divided doses (Paediatric)
- Nasal drops containing nasal decongestants such as 1% ephedrine, 0.1% xylometazoline. (See Annexure - how to use nasal drops)
- Tab Cetirizine 5mg bedtime can be given to control rhinorrhoea.
- Antibiotics such as Amoxicillin 500mg TDS/Azithromycin 500mg OD, when indicated only after consultation with medical officer OR (Syrup Amoxicillin 40mg/kg/day in 3 divided doses for Paediatric age group)
- Hot fomentation
- Steam inhalation

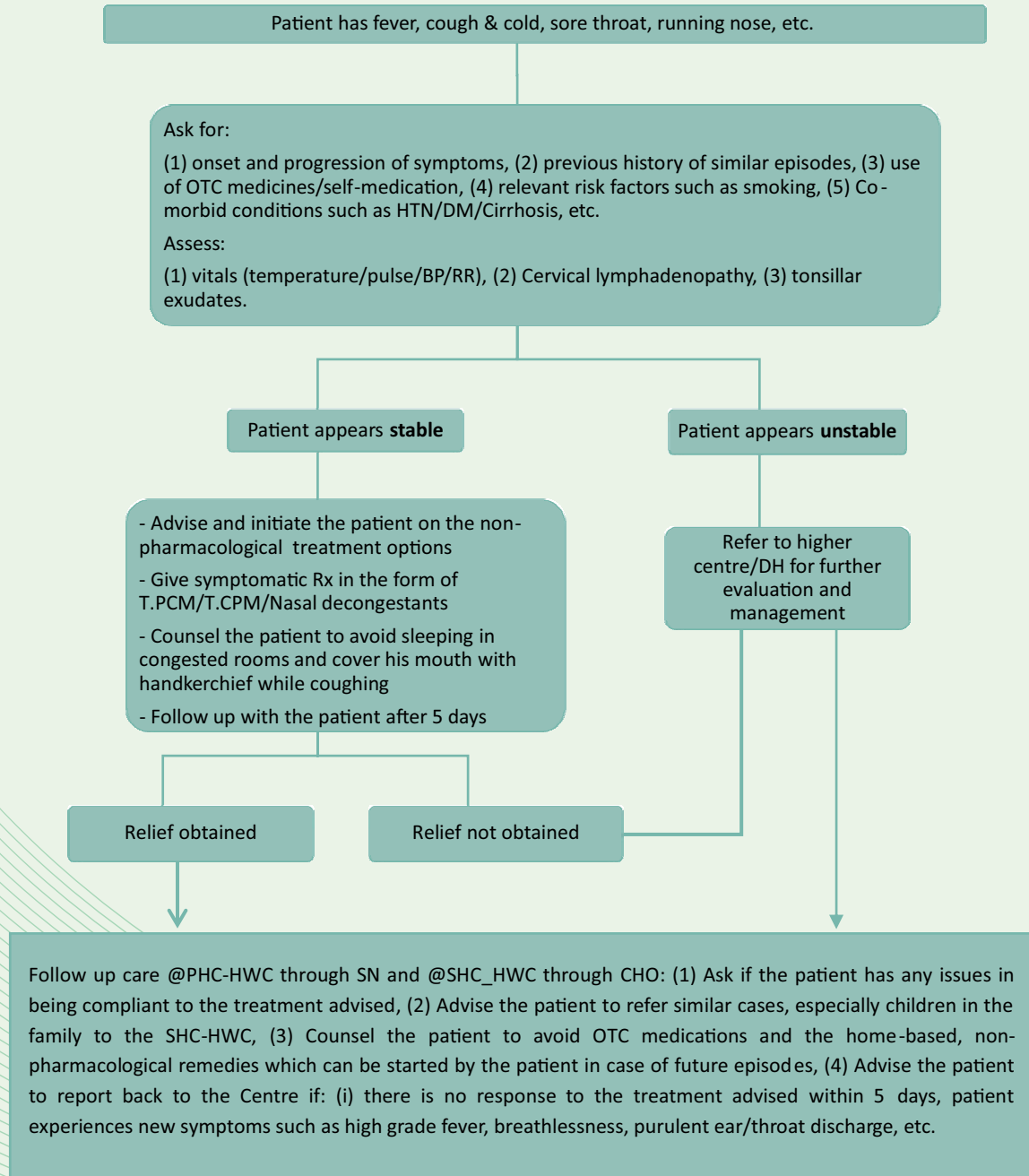
Note: If complain of sinus pain like rhinitis, nasal obstruction, headache is lasting for more than 3 months than it is known as chronic sinusitis, for which you have to refer the patient to higher centre for further management and treatment. Follow-up is the key here.



### **ROLE OF THE STAFF NURSE IN UPPER RESPIRATORY TRACT INFECTIONS**

- Identify the type of URTI when the patient comes to the clinic or you see a case in the OPD.
- Provide general symptomatic treatment for the fever, runny nose and headache.
- Advise rest, steam inhalation, drinking warm fluids and good nutrition.
- If suspecting a bacterial infection, consult the MO to initiate antibiotics. Once prescribed, you can ensure that the patient gets and takes the antibiotics correctly and completes the course.
- If not better within 7 days, refer to the higher centre. (District Hospital/CHC).
- Conduct health education session to prevent colds and raise immunity through good nutrition and regular health check-up.
- Follow up all cases treated with antibiotics and all chronic cases.
- Keep updated records.

## REFERRAL CARE PATHWAY FOR URTIs



# 08

## ACUTE TONSILLITIS

### Introduction:

Palatine Tonsils are a pair of special tissues situated at the back of the throat which act as filters, capturing most of the pathogenic organisms which would otherwise enter the lungs and cause infection. Often, especially in children, they get infected and inflamed leading to condition known as Tonsillitis.

### Causes:

Tonsillitis is most often caused by common viruses, but bacterial infections can also be the cause. The most common bacterium causing tonsillitis is *Streptococcus pyogenes* (group A streptococcus).

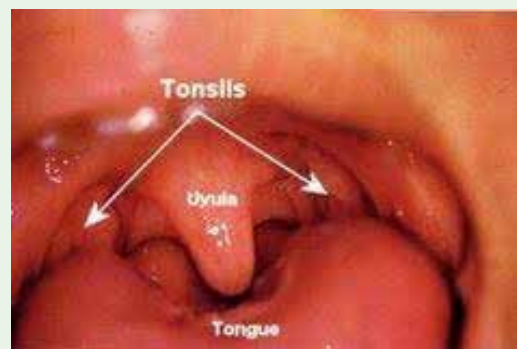
### Clinical features:

#### Symptoms:

- Sore throat
- Difficult or painful swallowing
- Fever
- Earache
- Change in voice
- General symptoms like headache, General body ache etc.

#### Signs:

- Patient may look toxic and febrile
- Red and swollen tonsils. May be studded with follicles or membrane. (White or yellow coating or patches on the tonsils)
- Enlarged, tender glands (lymph nodes) in the neck



(a)



(b)



### Investigations:

- CBC, ESR
- Throat Swab
- CXR

### Management:

Management of tonsillitis:

Most of the cases with tonsillitis can be managed by medicines alone. Timely initiation of medicines would bring relief to them within 5-7 days. The usual line of treatment in uncomplicated cases includes:

1. T. PCM (500 mg). Three times a day OR Syrup PCM 10-15mg/kg bodyweight in 3 divided doses (Paediatric)
2. T. Amoxicillin (500 mg). Three times a day OR (Syrup Amoxicillin 40mg/kg/day in 3 divided doses for Paediatric age group)
3. Warm Saline Gargles / betadine gargles, 3-4 times a day



(c)

(a) Normal Tonsils ; (b) Inflamed tonsils in tonsillitis; (c) tonsils covered with exudates

It is important to note that some patients may need to undergo surgery for cure. Some indications of surgery include:

- Recurrent infection of throat (7 or more episodes in 1 year or 5 episodes per year for 2 years or 3 episodes per year for 3 years)
- Association with febrile seizures, tonsillar swelling causing airway obstruction,
- Difficulty in swallowing/speaking
- Suspicion of malignancy
- Cases who do not respond to antibiotics

### Your role in the management of tonsillitis:

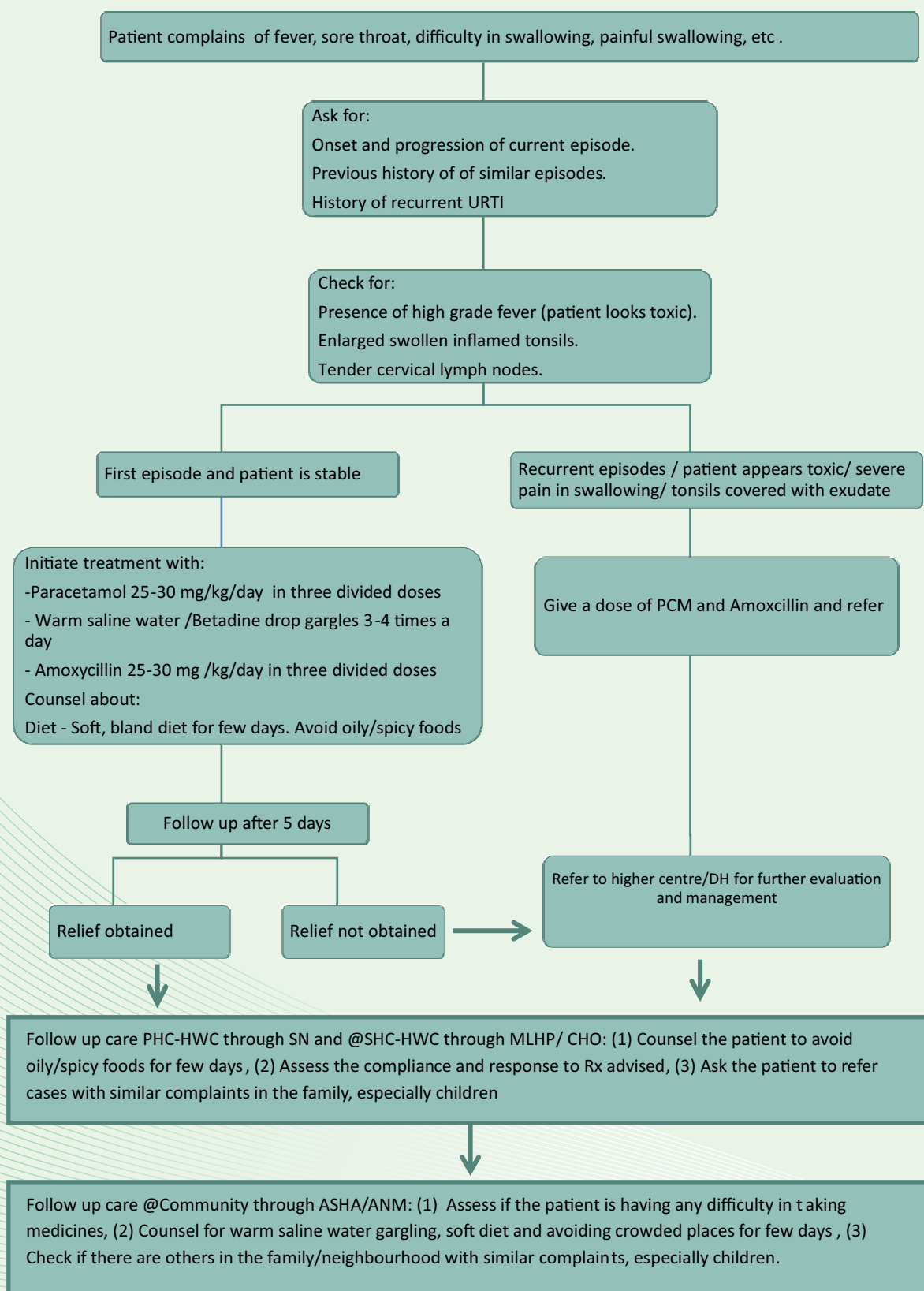
- o As a case with tonsillitis is most likely to be first presented to you, you must be able to undertake a detailed history and examination of the cases, initiate the treatment or refer, as indicated. It is important to impress upon the patient the importance of consuming a soft bland warm diet and avoiding cold, oily and spicy foods, at least till complete recovery.
- o You would also be providing the follow-up care for all these individuals, wherein you would be expected to assess the compliance/response to the treatment advised and refer back the cases which do not improve after 5-7 days of treatment.

*Important Note:* Chronic tonsillitis may be a complication of acute tonsillitis or sub clinical infection of tonsils without acute attack. It is mostly seen in children and young adults. Its conservative management consists of attention to general health, diet, treatment of any co-existent infections of teeth, nose and sinus. In either of the case of the case you have to refer the patient to higher centre.

### **ROLE OF THE STAFF NURSE IN ACUTE SORE THROAT/TONSILLITIS**

- Check the throat of all the patients who complain of sore throat or difficulty in swallowing.
- Advise warm saline water gargles and avoiding any cold, oily or spicy foods
- If tonsils are inflamed or there is an exudate, the patient will require antibiotics, therefore, consult the MO at the PHC to initiate antibiotics.
- Ensure that the patient is taking the full course of antibiotics and other medicines prescribed
- Follow up all cases- referred or treated
- If there is no improvement in a week, any indication of surgery present and chronic tonsillitis is suspected then refer to higher centre. (District Hospital/ CHC)
- During health education sessions, emphasise on importance of avoiding dust, keeping the throat moist by sipping water often and maintaining good personal hygiene
- Keep records of all cases updated

## CARE PATHWAY FOR TONSILLITIS





# 09

## SUPPURATIVE OTITIS MEDIA

### Introduction:

An inflammatory condition of the middle ear space is known as Otitis Media. It is most commonly present in infants and children but may also occur in adults. It is commonly associated with poor hygiene.

### Classification:

- Acute Suppurative Otitis Media: Duration of symptoms <14 days
- Chronic Suppurative Otitis Media: Duration of symptoms >90 days

### Risk factors:

- Recurrent attacks of common cold, upper respiratory tract infections, measles, diphtheria, Whooping cough.
- Infections of tonsils
- Chronic rhinitis and sinusitis
- Nasal allergy
- Cleft palate

### Clinical features of ASOM:

Symptoms:

- Disturbed sleep due to marked earache
- Pain in the ears, reduced hearing
- Fever (may rise up to 102°F- 103°F)
- If TM perforated: Bleeding/Muco-purulent ear discharge
- Tinnitus in some cases
- Additional symptoms in children – Fever/vomiting/loose motion/sleeplessness/incessant cry/irritability

### Signs:

- Features of Upper Respiratory Tract Infection
- Tenderness can be present over mastoid region
- External auditory canal may contain blood-tingled discharge which may be mucopurulent.

### Management of ASOM:

- Counsel the patient:
  - Keep the ear dry (prevent water from getting into the ear)
  - In case of discharge – dry mopping of the ear with a clean cotton wick.
  - Not to put any indigenous eardrops
- Dry mopping of the of the ear canal with sterile cotton wick (See Annexure – how to make wick)
- T. PCM (500 mg). Three times a day OR Syrup PCM 10-15mg/kg bodyweight in 3 divided doses (Paediatric)  
T. Amoxicillin (500 mg). Three times a day OR (Syrup Amoxicillin 40mg/kg/day in 3 divided dose for Paediatric age group) (if allergic, give T. Azithromycin 500 mg TDS)
- Ephedrine nose drops 1% in adults and 0.5% in children or Xylometazoline or oxymetazoline can be used 2-3 drops thrice a day (See Annexure – how to use nasal drops) to reduce oedema Eustachian tube and promote ventilation of middle ear
- Ear toilet: If discharge is present, then a sterile cotton can be used to mop it but care should be taken not to put cotton roll inside, only discharging pus needs to be cleaned
- Follow up after 5 days



### **Indications for referral:**

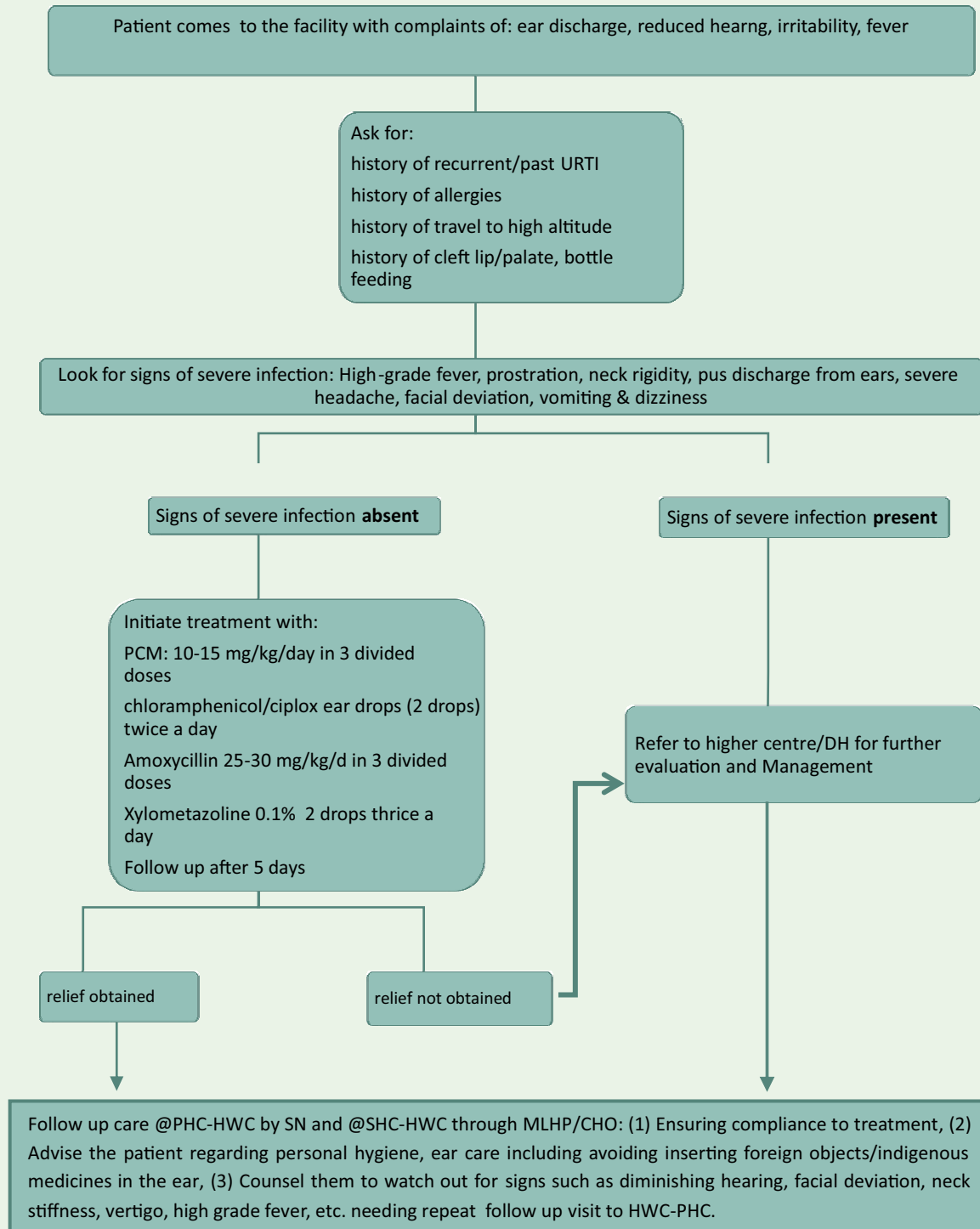
- Persisting symptoms or symptoms worsen even after 48 hours of medical treatment
- Patient develops features like vomiting with headache/facial palsy/dizziness/mastoid tenderness
- Treating focal sepsis (acute adeno tonsillitis, rhinosinusitis, URI allergy) and underlying condition
- If foul smelling discharge is present.

Important Note: A condition known as Serous Otitis Media is characterised by accumulation of non-purulent (watery/ thick) effusion (discharge) in the middle ear. The fluid is nearly sterile i.e. non-infective. The condition is commonly seen in school going children. Mostly viral infection and seasonal allergy are its causes. It is also present with hearing loss, mild earaches but the symptoms are less severe than Suppurative Otitis Media. Nasal decongestants and antihistaminic can be used for its treatment.

### **ROLE OF THE STAFF NURSE IN SUPPURATIVE OTITIS MEDIA**

- Diagnose all cases of ear pain and confirm infection of the outer ear canal
- Clean ear with a dry cotton wick
- Give symptomatic treatment for pain
- Consult with MO for confirming diagnosis and initiating treatment
- Follow up all cases to ensure that they complete the antibiotic treatment in case there is no improvement after 1 week
- Identify adenoid problems by asking about history of snoring, mouth opening, day-time sleepiness, and other signs. Identify danger signs and promptly refer
- Refer to higher centre. (District Hospital/ CHC) if not better, pain is not controlled, bloody discharge from ears, hearing loss which is gradually increasing
- Advise the community about personal hygiene and how to clean the ears regularly
- Avoid putting sharp objects in the ear. Clean and dry the ears after swimming
- Keep record of all cases updated

## REFERRAL CARE PATHWAYS FOR OTITIS MEDIA



# 10

## OTITIS EXTERNA

### Introduction

Otitis externa is an inflammatory process of the external auditory canal. It is most commonly caused by infection (usually bacterial, although occasionally fungal), but may also be associated with a variety of non-infectious systemic or local dermatologic processes.

### Pathophysiology:

The following unique structure of the external auditory canal contributes to the development of otitis externa:

- i. The external auditory canal is warm, dark and prone to becoming moist, making it an excellent environment for bacterial and fungal growth.
- ii. The canal is easily traumatised.
- iii. The exit of debris, secretions and foreign bodies is reduced by a curve at the junction of the cartilage and bone.
- iv. The presence of hair, especially the thicker hair common in older men can lead to furuncle.

### Clinical features:

- i. Severe pain in ear on movement of pinna
- ii. Jaw movements can also be painful
- iii. Lymph node swelling can also be present
- iv. Diffuse inflammation of ear canal with crusts and discharge from ear



**Management:**

- i. Clean ear with cotton wick. (See Annexure – how to make wick)
  - An ear pack of 10% ichthammol glycerine provide splint-age and reduce pain. (Hygroscopic action of glycerine reduces oedema, while ichthammol is mildly antiseptic) (See Annexure – how to put ear drops)
- ii. Cap Ciprofloxacin for 5 days in age-appropriate dosage
- iii. Tab Paracetamol 500 mg twice daily for 5 days.

**Indications for referral:**

- If patient is not responding to treatment or skin over ear canal is thickened to cause obstruction

**ROLE OF THE STAFF NURSE IN EXTERNAL OTITIS MEDIA**

- Diagnose all cases of ear pain and confirm infection of the outer ear canal
- Clean ear with a dry cotton wick
- Give symptomatic treatment for pain
- Consult with MO for confirming diagnosis and initiating treatment
- Follow up all cases to ensure that they complete the antibiotic treatment. In case there is no improvement after 1 week, refer to higher centre (District Hospital/CHC)
- Advise the community about personal hygiene and how to clean the ears regularly
- Avoid putting sharp objects in the ear. Clean and dry the ears after swimming
- Maintain updated records

# 11

## EARACHE (OTALGIA)

### Introduction:

Pain in the ear is known as Otolgia. It is a symptom. It is essential to find its cause before specific treatment can be started. Most commonly present in childhood although it may also occur in adults (secondary otalgia).

### Causes of otalgia:

a) Primary otalgia (most common):

Pathology causing the pain exists within the ear itself, e.g. external otitis, otitis media, mastoiditis, impacted wax etc.

b) Secondary (referred) otalgia:

The ear is innervated by many nerves, namely the cranial nerves number V, VII, IX and X. Any noxious stimulation of any branch of the above mentioned nerves may lead to pain in ear, e.g. pharyngitis, tonsillitis, temporomandibular joint pain, dental pathologies, trigeminal neuralgia, intracranial lesions, etc.

### Investigations:

- i) Complete Blood Count, Erythrocyte Sedimentation Rate (ESR)
- ii) Audiometry
- iii) Radiological investigations like CT/MRI – less frequently

### Management:

- Carry out a thorough general and systemic examination, including ear, oral and throat examination
- As explained earlier, otalgia is a symptom so finding out the underlying cause is very important before starting any specific treatment
- Look for signs of infection/trauma around the ear
- If there are secretions in the ear canal, mop them clean with a sterile gauze piece

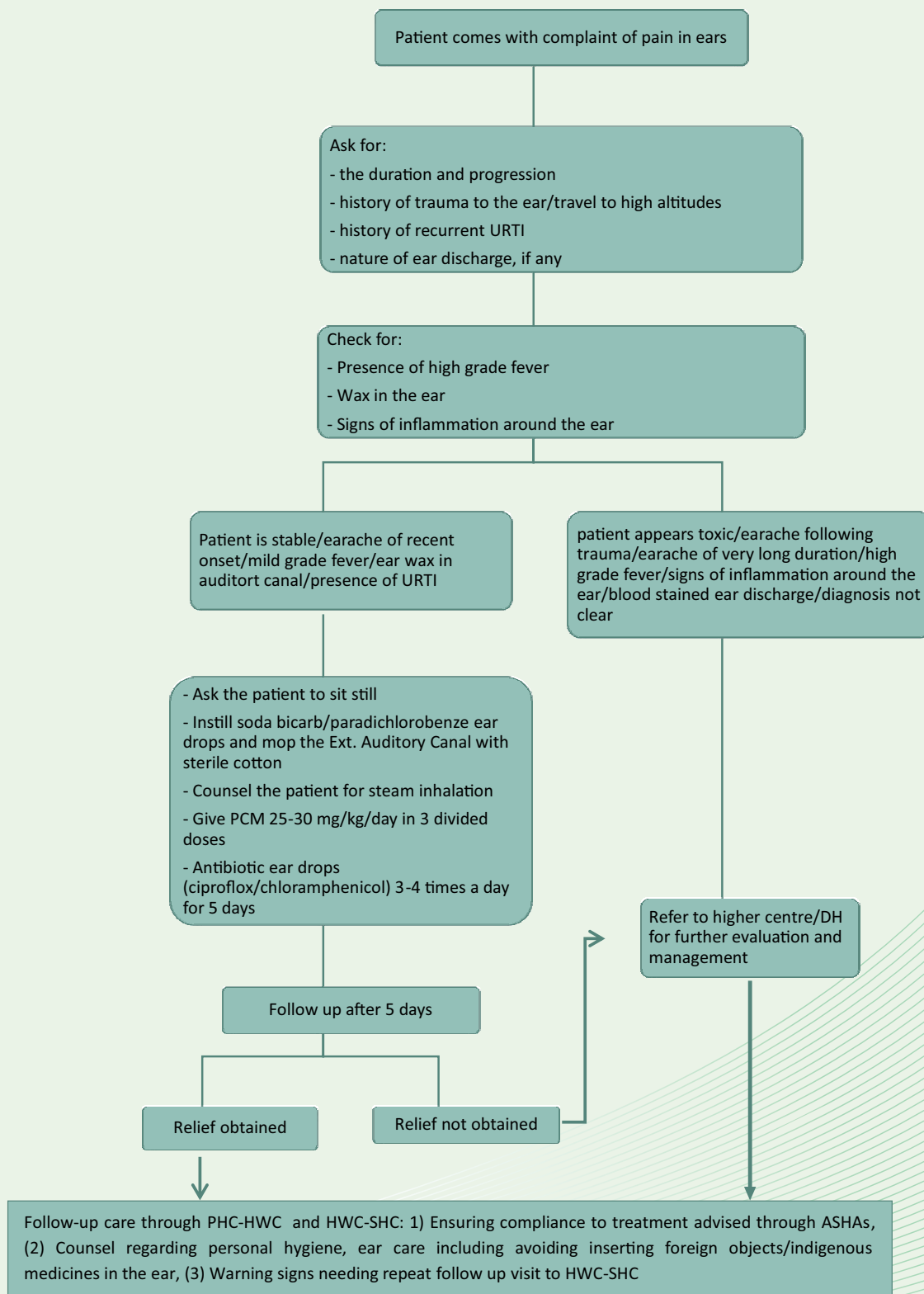
- Instil antibiotic ear drops such as Ciprofloxacin ear drops, 2 drops at a time, 2-3 times a day only when no discharge is coming out from ear. (See Annexure – how to put ear drops)
- In case of active discharge, the possibility of ear perforation may be there, where ear drops are to be cautiously used and or as advised by a specialist only
- For reducing pain, start PCM 25-30 mg/kg/d in 3 divided doses
- Follow up after 5 days to assess response to the treatment

#### Indications for referral:

- Any severe acute pain needs referral after giving painkillers
- Chronic pain (i.e. pain lasting >2 weeks), especially if associated with other head/neck symptoms
- Swelling/other signs of inflammation at external auditory canal
- Patient having high grade fever/ appearing toxic
- Earache following trauma/no apparent reason for earache (no reference)



## REFERRAL CARE PATHWAYS FOR EAR ACHE



# 12

## VERTIGO

### Introduction:

A subjective feeling of movement, either of self or the objects around in the environment, is known as vertigo. Various terms are used by patients to describe this feeling like bouncing, oscillating, twisting, rolling, spinning, light-headedness, imbalance, floating, fainting, etc.

It is important to note that, although most commonly they are benign but, in few cases, they signal the presence of neurological/systemic disorders.

### Causes:

- (a) *Otological causes:* Meniere's disease, Benign paroxysmal positional vertigo (BPPV), labyrinthitis, vestibule-toxic drugs, otosclerosis, etc.
- (b) *Neurological causes:* Multiple sclerosis, transient ischemic attacks, intra-cranial tumours, seizures, etc.
- (c) *Systemic causes:* Hypotension, certain viral infections, hypothyroidism, diabetes, polycythemia, syphilis of inner ear, head injury, certain drugs such as anti-convulsants (phenytoin, pregabalin, gabapentin), anti-hypertensive (nifedipine, propranolol, furosemide, hydrochlorothiazide), anti-depressants (fluoxetine), analgesics (codeine), alcohol, etc.

### Clinical features:

Symptoms:

- Dizziness
- Feeling of rotation or spinning
- Light headedness, faintness, weakness
- May be associated with blurring of vision, syncope or 'black out' and imbalance/unsteadiness



### Examination:

- Detailed general and systemic examination (especially CVS and CNS examination)
- BP and RBS
- Romberg's test:

Ask the patient to stand with their feet together (touching each other). Then ask the patient to close their eyes. Remain close at hand in case the patient begins to sway or fall.

### Interpretation:

- *Patient does not sway at all:* Normal
- *Patient sways after closure of eyes:* Also known as Romberg Positive. Occurs due to diseases in the vestibular system (ear problem) or sensory nervous systems (proprioceptive dysfunctions)
- *Patient sways even with eyes open:* Disease in the cerebellar functions of the patient
- Tuning fork tests

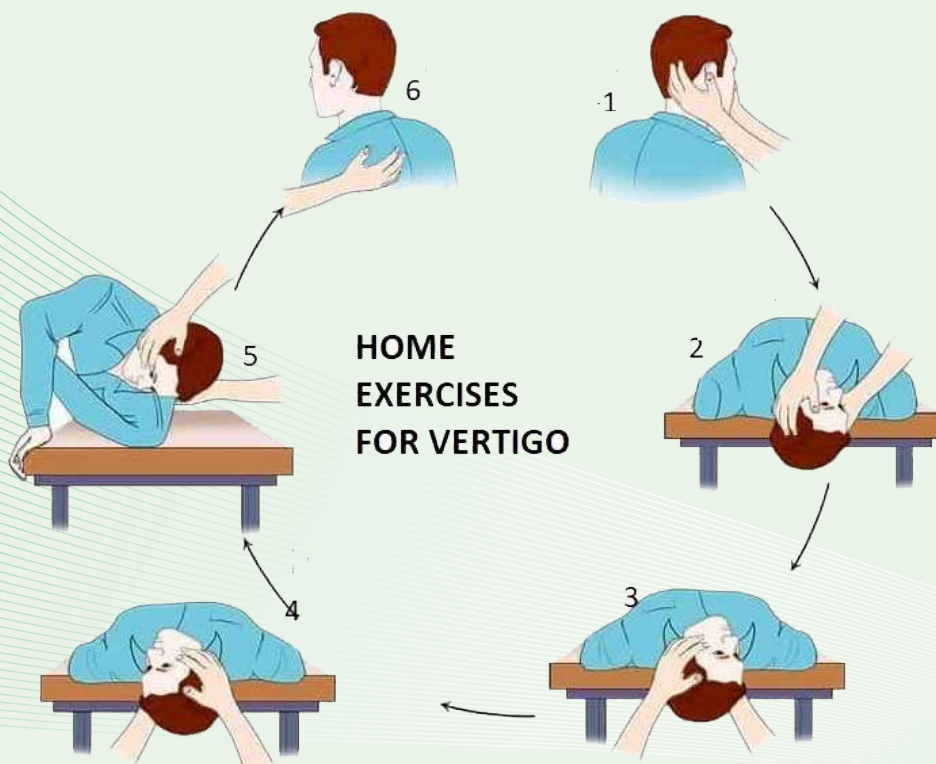
### Investigations:

- History:
  - o History of dizziness, giddiness, deafness, tinnitus, otorrhea, systemic & neurological symptoms.
  - o Past history of Giddiness, Injury, Diabetes, Hypertension, Medication and Surgery should be noted. History of tobacco and alcohol consumption should be noted.
- Lab investigation: CBC with Hb%, ESR Blood sugar, serum cholesterol, Thyroid function test
- X-ray mastoid, cervical spine and skull
- Radiological investigations – less frequently used



### Management:

- Reassurance regarding the nature of the disease, avoidance of provocative posture
- Specific treatment would depend on the underlying condition
- However, certain drugs like Prochlorperazine 5mg BD OR Cinnarizine 25 mg TDS OR Betahistine 16 mg TDS for 3 weeks may be started
- Multi-vitamin supplements may also be added
- Diuretics (Frusemide 20/40Mg for 3 to 5 days) and low salt diet for reducing the tension of endolymph can also be used
- Counsel the patient about:
  - Reduced intake of caffeine/alcohol
  - Avoid performing tasks which may cause harm to patient such as working on heavy machines, driving, etc.
  - Keep a note of the medicines being consumed and emergency contact numbers in your pocket whenever going out of house alone
- Labyrinthine Exercises are helpful in regaining the confidence of the patient in case of BPPV. **(avoid in patients with neck problems)** The manoeuvre consists of five positions.
  - *Position 1* - With the head turned 45 degrees, the patient is made to lie down in head hanging position. It will cause vertigo and nystagmus. Wait till vertigo and nystagmus subside.



- o *Position 2* - Head is now turned so that affected ear is up.
- o *Position 3* - The whole body and head are now rotated away from the affected ear to a lateral recumbent position in a facedown position.
- o *Position 4* - Patient is now brought in a sitting position with head still turned to the unaffected side by 45 degrees.
- o *Position 5* - The head is now turned forward and chin brought down 20 degrees.

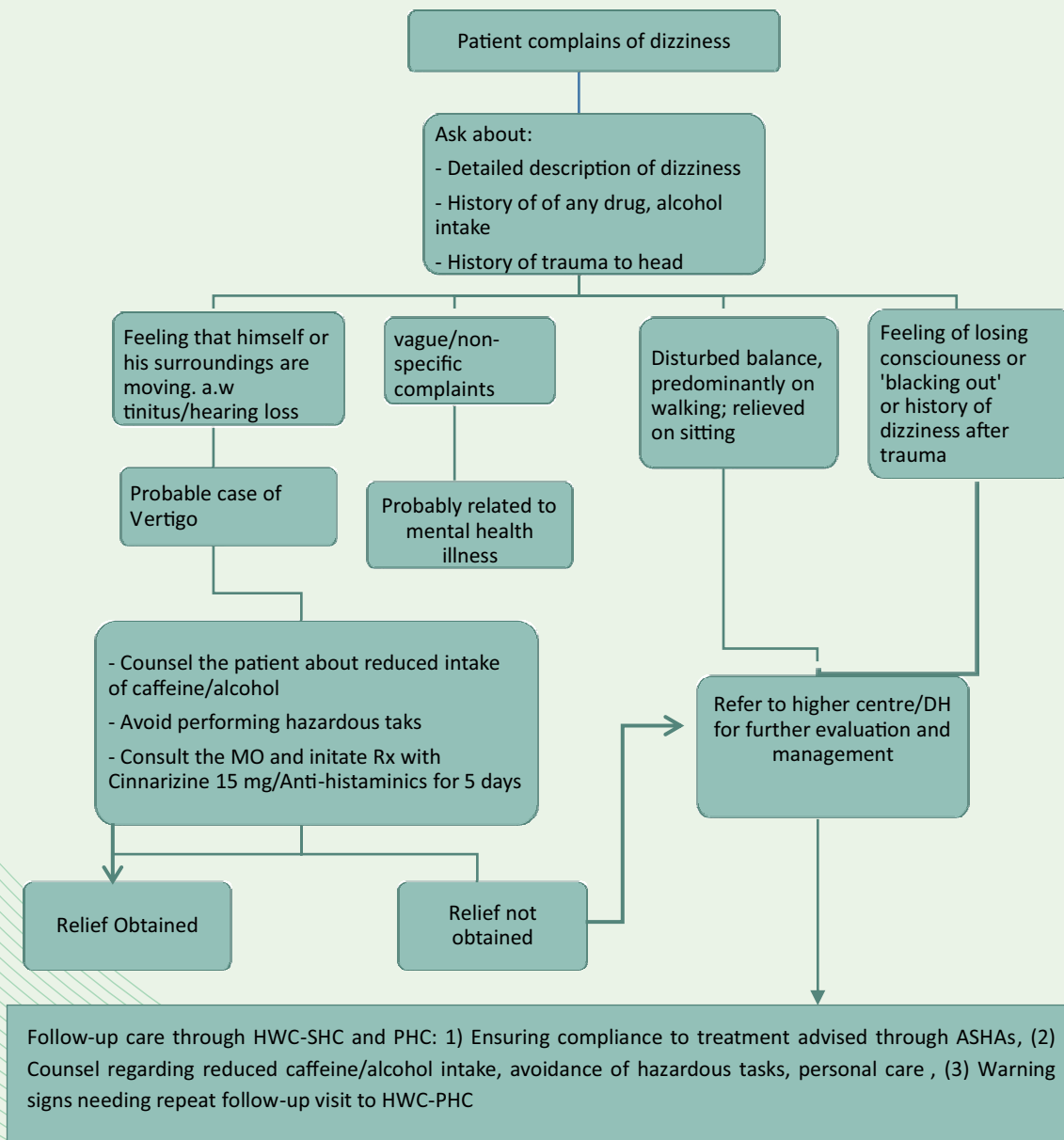
There should be a pause at each position till there is no nystagmus or there is slowing of nystagmus, before changing to the next position. After manoeuvre is complete, patient should maintain an upright position for 48 hours. 80% of the patients will be cured by a single manoeuvre. If the patients remain symptomatic, the manoeuvre can be repeated.

**Indications for referral:**

- No relief to treatment initiated
- Symptoms suggestive of syncope, cerebellar lesions, neurological/ systemic illnesses
- Onset after history of trauma to the head/ear
- Known case of epilepsy
- Known case of any inner ear pathology, tumours
- History of taking any vestibule-toxic drugs.

*Important Note:* If no systemic findings are present and routine investigation are normal, then patient needs referral to higher centres for further management as vertigo decrease the physical quality of life and patient will not be able to do his day-to-day activity properly.

## REFERRAL CARE PATHWAY FOR VERTIGO





# 13

## FOREIGN BODY IN EAR

### Introduction:

Foreign bodies (FB) of the ear are relatively common in emergency medicine. They are more frequent, but not exclusively, in children. As many as nearly 40% of the cases would be within the age group of 2-8 years. The type of FB in the ear varies with the age. In children, objects such as small toys, beads, stones, folded paper, and biologic materials such as insects or seeds are more frequent whereas in adults it is usually cotton swabs/first-aid products etc.

### Classification of FBs:

- (a) Animate: e.g. Insect, Flies, Maggots
- (b) Inanimate:
  - i. Hygroscopic: e.g. vegetable, beans and seeds
  - ii. Non-hygroscopic: e.g. beads, stones, pebbles, rubber, metallic FB

### Clinical Features:

- History of FB entering the ear
- Ear Pain
- Tinnitus
- Discomfort and complain of nausea or vomiting if a live insect is in the ear canal
- Hearing loss or sense of fullness

### Signs:

- Physical findings vary according to the nature of the object and the amount of time it has been in the ear.
- An inanimate object that has been in the ear for a very short time typically presents with no abnormal finding other than the object itself seen on direct visualisation or otoscopic examination.
- Pain or bleeding may occur by objects which have sharp edges.



- With delayed presentation, erythema and swelling of the canal and a foul-smelling discharge may be present.

### **Management:**

- Method of removing FB depends on type of FB:
  - Soft and irregular FB like a piece of paper, swab or a piece of sponge can be removed with fine alligator forceps.
  - Smooth objects like seed grains can be removed with syringing by trained staff only.
  - Hard objects like metal (ball bearings) should not be grasped with forceps as they tend to move inwards and may injure the tympanic membrane. These cases should be referred to a higher centre.
  - Insect removal: The first step is to kill the insect, which will allow the patient to be more comfortable and allow for removal of the insect thereafter. There are multiple recommended agents for killing the insect, like mineral oil (most effective) followed by lidocaine. Both can be instilled in the external auditory canal, and once the insect is killed, it can be removed by any of the above methods. Similar steps can be taken if maggots (FB) are present in the ear.

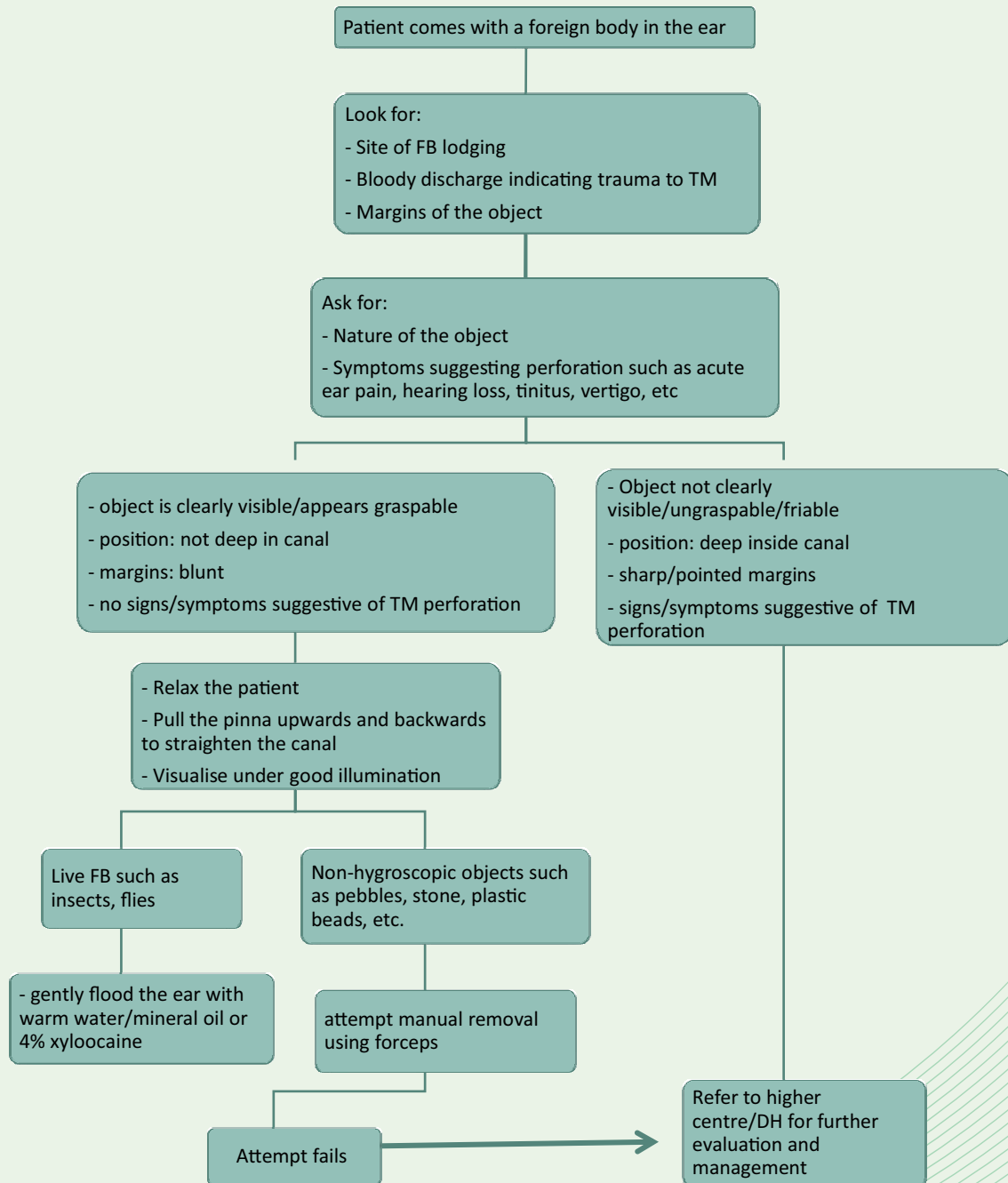
### **Indications for referral:**

- When patient needs sedation
- Extremely restless patient
- Sharp objects
- Objects appear deep in ear canal
- Object appears to be tightly impacted
- Any kind of discharge from the ear
- Previous removal attempt was unsuccessful

### **ROLE OF STAFF NURSE IN REMOVAL OF FOREIGN BODY EAR**

- First find out what type of foreign body and where exactly it is
- If possible, try and remove
- If person is restless or aged under 10 years, then do not try and remove object. Refer to a higher centre/DH for further evaluation and management
- Ensure that there is no other injury to the head or neighbouring area
- Follow up all the cases that are referred
- Advise the community about keeping children safe and away from small seeds, stones etc. that can go into their ear
- Keep records and registers updated

## REFERRAL CARE PATHWAYS FOR FOREIGN BODY IN EAR



# 14

## FOREIGN BODY IN AIR PASSAGE

### Introduction:

Foreign body (FB) aspirated into air passage is yet another emergency which may be presented to you. FB can be lodged in the larynx, trachea or bronchi. Site of lodgement would depend on the size and nature of FB. This condition too is more common in children (50% of them are below 4 years), although adults, especially those intoxicated, do present themselves with this condition.

### Clinical features:

- Initial period of choking, gagging, and wheezing: Short period, FB may be coughed out or it may lodge in the larynx.
- Laryngeal foreign body: May be present with discomfort, pain in throat, hoarseness of voice, cough, dyspnea, stridor and hemoptysis.
- Tracheal foreign body: A sharp FB will only produce cough and hemoptysis.

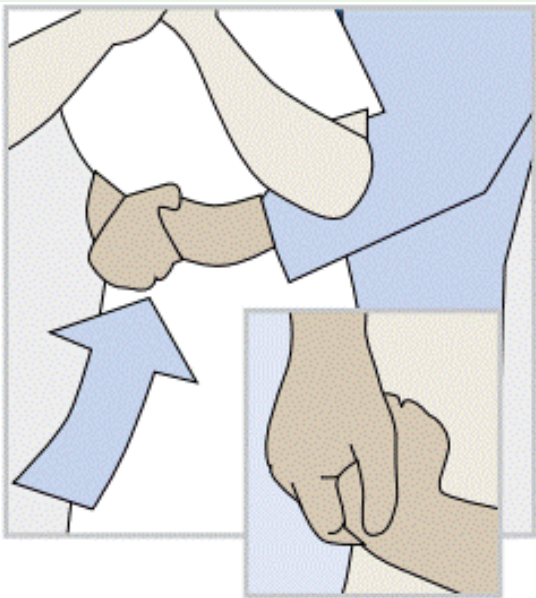
### Management:

Diagnosis: Physical examination of neck and chest should be done. Also, the patient will tell about the history of sudden onset of coughing, wheezing, and choking. Usually, plain X-ray in postero-anterior and lateral view of neck is very helpful. Also X-ray chest is helpful if FB lodged in bronchial airway. Very rarely CT chest is required.

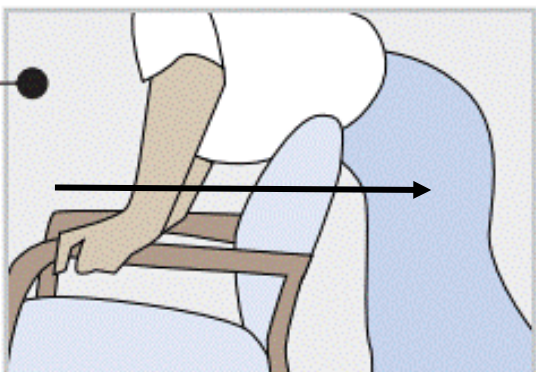
- *Steps to perform in case of choking:*
  - i. If the person is able to cough forcefully, the person should keep coughing.
  - ii. If the person is choking and can't talk, cry or laugh forcefully, the American Red Cross recommends a 'five-and-five' approach to delivering first aid:
    - a) Give 5 back blows. Stand to the side and just behind a choking adult. For a child, kneel down behind. Place one arm across the person's chest for support. Bend the person over at the waist so that the upper body is parallel with the ground. Deliver five separate back blows between the person's shoulder blades with the heel of your hand.



Figure: Showing 'five-and-five' approach in case of choking



1. Stand behind the victim, wrap your arms around his or her waist
2. Clasp your hands together in a double fist and place the fist-thumb side in, just below the victim's rib cage and above the navel
3. Press into the victim's abdomen (not the rib cage) with a quick, upward thrust
4. Repeat thrusts until the object is dislodged



If you are alone

If alone and choking you can give yourself abdominal thrusts. Press your abdomen onto a firm object, such as the back of a chair

*Do not perform this if the patient is coughing, speaking*



- b) Give 5 abdominal thrusts. Perform five abdominal thrusts (also known as the Heimlich Manoeuvre).
- c) Alternate between 5 blows and 5 thrusts until the blockage is dislodged.

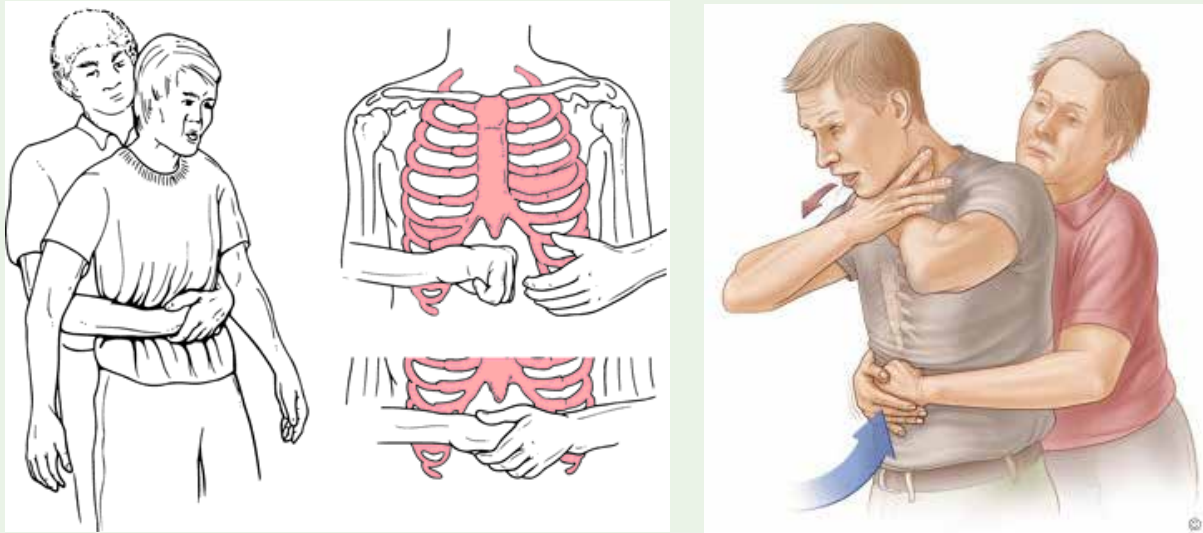


Figure: Showing patient positioning while performing Heimlich Manoeuvre

- **Steps for performing the Heimlich Manoeuvre**

- i. Stand behind the person. Place one foot slightly in front of the other for balance. Wrap your arms around the waist. Tip the person forward slightly. If a child is choking, kneel down behind the child.
  - ii. Make a fist with one hand. Position it slightly above the person's navel.
  - iii. Grasp the fist with the other hand. Press hard into the abdomen with a quick, upward thrust — as if trying to lift the person up.
  - iv. Perform between six and 10 abdominal thrusts until the blockage is dislodged.
- If it fails, there is an URGENT need to refer the patient to CHC/DH (whichever is closest with availability of PHC-HWC)
  - If the patient is not choking, it is necessary to estimate if the object is stuck above the oesophageal constrictions or has passed the oesophagus. This may be ascertained by attempting insertion of Ryle's tube/asking the patient to drink few glasses of water (procedure should be performed only by trained Staff). Failure to do any of above warrants OR in the case of ingestion of sharp and large objects, IMMEDIATELY refer to DH/Specialist.
  - If the object has passed the oesophagus and the object was small with smooth edges, the patient may be reassured and counselled to visit the DH/Specialist in case of pain in abdomen, change in colour/consistency of stools, etc.
  - If fish bone is suspected, then ask the patient to take mashed banana or boiled potato.



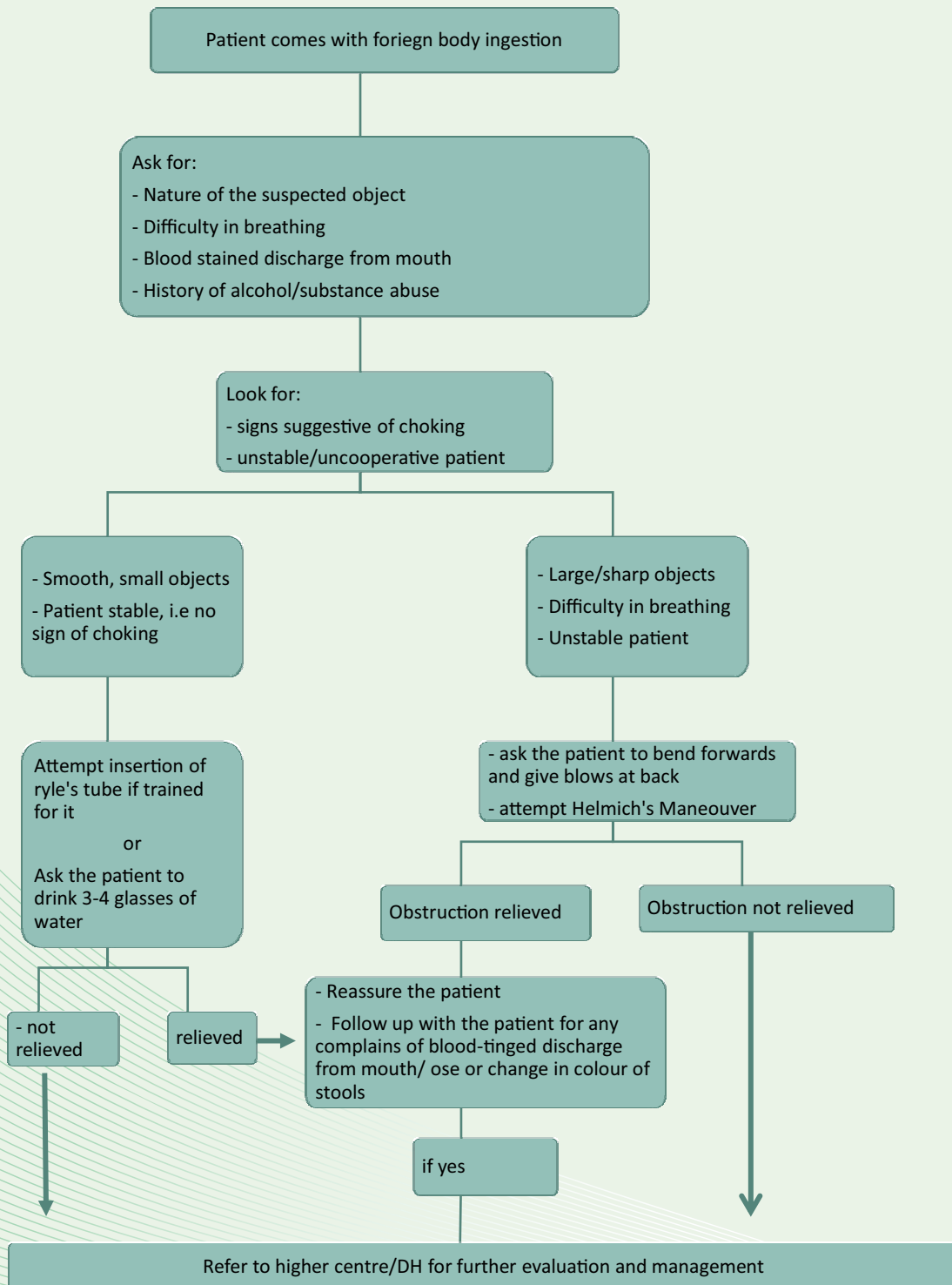
**Immediate referral:**

- If above all methods fails
- If patient is turning blue (facial skin colour turning blue – cyanosis)
- If patient become unconscious
- If suspected FB is poisonous like discarded button batteries
- If patient requires immediate investigation (like X-ray, CT)
- If FB is tracheal/bronchial where patient mainly presents with history of FB ingestion, cough, hemoptysis

**ROLE OF STAFF NURSE IN REMOVAL OF FOREIGN AIR PASSAGE**

- First find out type of foreign body and where exactly it is
- Try and remove in the presence of other staff or medical officer if possible
- If symptoms are not relieved, refer to higher centre/DH for further evaluation and management
- Ensure that there is no other injury to the head or neighbouring area
- Follow up all cases that are referred
- Advise the community about keeping children safe and away from small seeds, stones etc that can go into their ear
- Keep records and registers updated

## REFERRAL CARE PATHWAYS FOR FOREIGN BODY IN THROAT



# 15

## HEARING LOSS/REDUCED HEARING

**Hearing loss can be of three types:**

- i. Conductive hearing loss (CHL)
- ii. Sensorineural hearing loss (SNHL)
- iii. Mixed type

Characteristic of Conductive Hearing loss	Characteristic of Sensorineural hearing loss
Rinne test is Negative i.e. BC>AC (See Annexure – how to perform Rinne test)	Rinne test is positive i.e., AC>BC
Weber lateralised to poorer ear (See Annexure – how to perform weber test)	Weber lateralised to better ear
Normal absolute bone conduction (BC)	Bone conduction reduced on Schwabach and absolute bone conduction tests
Low frequencies are affected more	More often involving high frequencies
Audiometry shows bone conduction (BC) better than air conduction (AC) with air-bone gap. Greater the air-bone gap more is the conductive loss	No gap between air and bone conduction curve on audiometry
Loss is not more than 60 dB	Loss may exceed 60 dB
Speech discrimination is good	Speech discrimination is poor

• **Diagnosis:**

- i. History: It is important to know whether disease is congenital or acquired, stationary or progressive, associated with other syndromes or not, family history etc.
- ii. Severity of deafness: (mild, moderate, severe, total) this can be found out on audiometry.

- iii. Type of audiogram: whether loss is high frequency, low frequency, mid-frequency, or flat type.
- iv. Site of lesion
- v. Laboratory tests

## Management

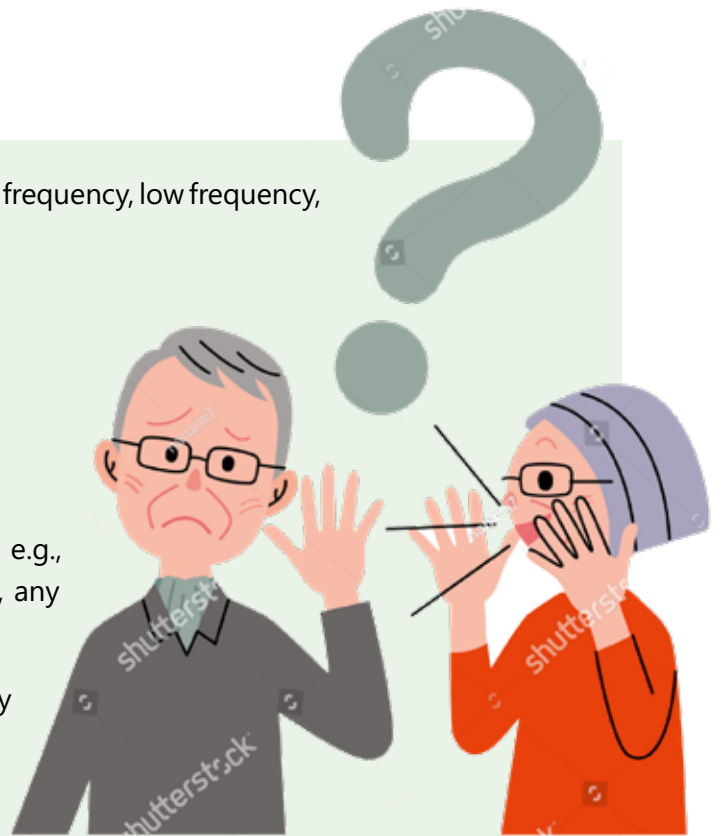
### A. Conductive hearing loss:

1. Removal of canal obstructions: e.g., impacted wax, foreign body, osteoma, any mass, benign/malignant tumours etc.
2. Removal of fluid: Myringotomy (Surgery) with or without grommet insertion
3. Removal of mass from middle ear: Tympanoplasty (Surgery) and removal of small middle ear tumours/mass behind intact tympanic membrane
4. Other Surgery (Mastoidectomy with ossicular reconstruction)

### B. Sensorineural hearing loss:

Depends on the underlying cause and also on the site of lesion. Early detection of SNHL is important as measures can be taken to stop its progress, reverse it or to start an early rehabilitation.

1. Syphilis of inner ear is treatable with high dose of penicillin and steroids with improvement in hearing.
2. Hearing loss of hypothyroidism can be reversed with replacement therapy.
3. Serous labyrinthitis can be reversed by attention to middle ear infection.
4. Early management of Meniere's disease can prevent further episodes of vertigo and hearing loss.
5. Ototoxic drugs like streptomycin, gentamicin, tobramycin, salicylate, antimalarial should be used with care and discontinued if causing hearing loss.



### Miscellaneous:

**Noise trauma** (*Acoustic trauma*): Permanent damage to hearing can be caused by a single brief exposure to very intense sound, e.g., an explosion, gunfire.

*Presbycusis*: Sensorineural hearing loss associated with physiological aging process in the ear is called Presbycusis. It is usually seen in individual > 65 years.

### Degree of hearing loss (WHO Classification)

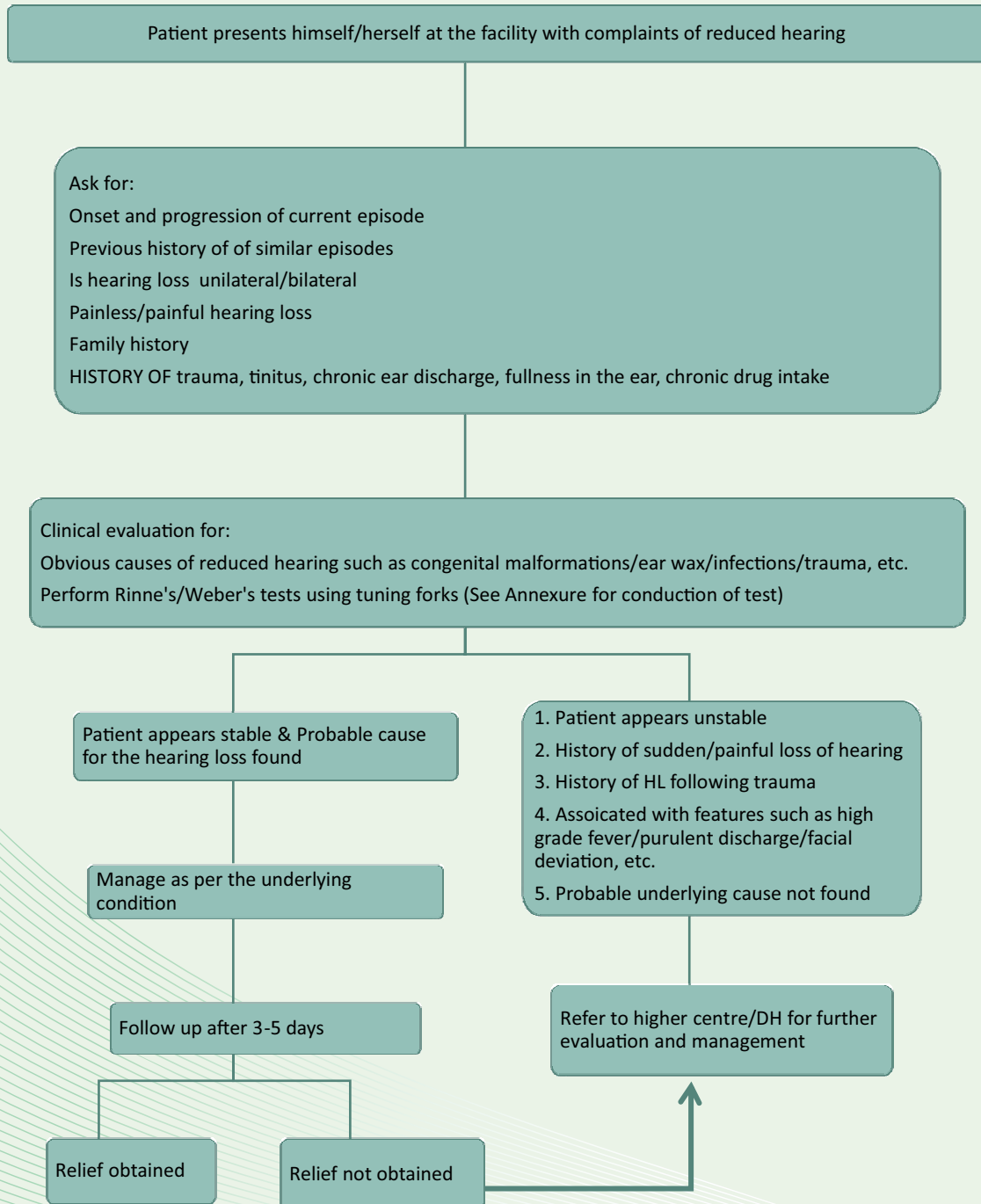
S. No.	Degree of impairment	Ability to understand speech
I.	Not significant	No significant difficulty with faint speech
II.	Mild	Difficulty with faint speech
III.	Moderate	Frequent difficulty with faint speech
IV.	Moderately severe	Frequent difficulty even with loud sounds
V.	Severe	Can understand only shouted or amplified speech
VI.	Profound	Usually, cannot understand even amplified speech

Issue of Disability Certificate: The certificate of disability is to be issued by a medical board consisting of at least three members, of which one shall be an otolaryngologist. Percentage of disability can be determined considering Pure Tone Average and Speech Discrimination Score as shown below (table)

Category	Type of impairment	Percentage of Disability
I	Mild	<40 %
II a	Moderate	40-50%
II b	Severe	51-70%
III	Profound	71-100%
IV	Total	100%



## Patient Care Flow chart for Reduced Hearing



## Raising Awareness in Community and School On Deafness

### **Deaf and hard of hearing people can do everything except hear normally!**

Hard of hearing (decreased hearing) and deaf people should not be shut away in the home because they are believed to be 'stupid' and so cannot do anything. Make the community aware of how to help people with hearing loss. Encourage them to take the person to have their ears examined and tested.

Public awareness campaigns could create a better understanding of hearing loss and the disability that it causes:

- ⊗ Local clinics could display posters/pictures about hearing loss and ear care to raise awareness amongst patients.
- ⊗ Communities should be encouraged to have a 'Healthy Ear Day' to raise awareness in the community.
- ⊗ Health workers could visit schools and talk to teachers and learners about hearing loss and its causes and effects. They should encourage activities such as designing posters to raise awareness and playing 'What can you hear?' games to find out if any of the children may have a hearing loss.
- ⊗ Tell teachers about hearing loss and encourage them to include this in their teaching programme.
- ⊗ Explain to teachers what to look for in children with hearing loss and refer children with possible hearing loss for treatment.
- ⊗ Encourage people with hearing loss to have their ears checked and their hearing tested.
- ⊗ Raise awareness in the community by speaking to social, religious, and other groups about hearing loss.
- ⊗ Encourage parents and teachers to use sign language with deaf and hard of hearing children.
- ⊗ Encourage the inclusion of hearing-impaired people in workplaces, in education and in society.
- ⊗ Encourage and support hearing-impaired people to form support groups for themselves and their families.

## Raising Awareness in Community and School On Deafness

Some ways people can help the children or adults who cannot hear well are:

1. Let the person see your face when you speak to them
2. Make sure there is good light for the person to see your face
3. Get the person's attention before you speak to them
4. Try to make sure there are no distractions – especially loud noises
5. Speak clearly and more slowly
6. Do not shout and make exaggerated movements
7. Repeat things (say again and again) many times slowly
8. Use gestures, drawings, pictures – point at things
9. Do not over protect the person – they should be encouraged to mix with other people
10. Point to your lips so that they learn to watch how the words are formed – this encourages lip-reading
11. Stand close to the person when you speak
12. Stand in good light

If the person has a hearing aid, he/she should learn to use it.



## Annexure 1 : Essential Skills Needed for Providing Primary ENT Care Services

### I. How to use Nasal Drops:

- i. Ask the patient to blow nose gently
- ii. Wash the hands thoroughly with soap and water
- iii. Check if the dropper tip is chipped or cracked
- iv. Avoid touching the dropper tip against the nasal mucosa
- v. Tilt your head as far back as possible, or lie down on your back on a flat surface (such as a bed) and hang your head over the edge (as shown in the figure above)
- vi. Put the correct number of drops into your nose
- vii. Bend your head forward towards your knees and gently move it left and right (as shown in the figure above)
- viii. Remain in this position for a few minutes
- ix. Clean the dropper tip with warm water. Cap the bottle right away
- x. Wash your hands to remove any medication



### II. How to put ear drops:

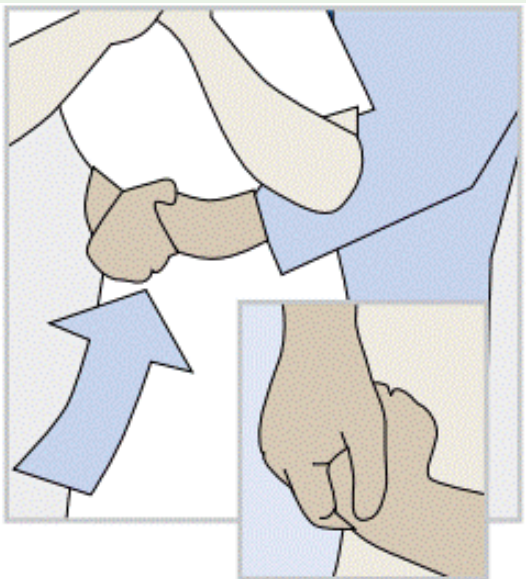
- i. Make the patient lie down or tilt the head with the affected ear facing upward
- ii. Open the ear canal by gently pulling ear upwards and backwards. This straightens the ear canal
- iii. Clear any visible superficial discharge
- iv. Hold the dropper of the medicine upside down over the ear and instil the recommended number of drops into the ear
- v. Avoid touching the dropper tip inside the ear, as it may get contaminated
- vi. After use, wipe the tip with a clean tissue. Do not wash with water or soap
- vii. Advise the patient to stay in the position for at least 15 minutes.

A small piece of cotton may be used to plug the ear

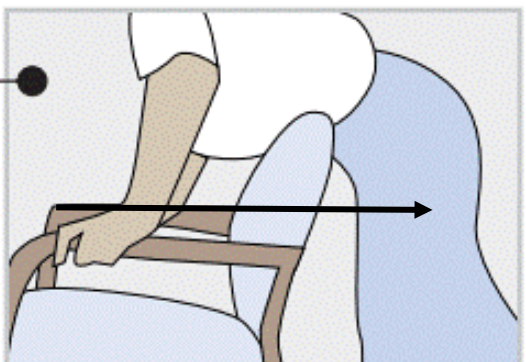


### III. Heimlich manoeuvre: Covered in the section of foreign body aspiration

- Steps for performing the **Heimlich Manoeuvre**:



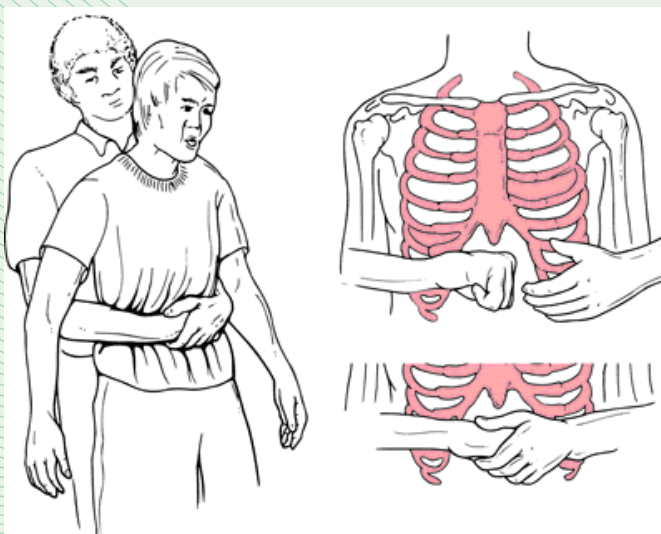
1. Stand behind the victim, wrap your arms around his or her waist
2. Clasp your hands together in a double fist and place the fist-thumb side in, just below the victim's rib cage and above the navel
3. Press into the victim's abdomen (not the rib cage) with a quick, upward thrust
4. Repeat thrusts until the object is dislodged



If you are alone

If alone and choking you can give yourself abdominal thrusts. Press your abdomen onto a firm object, such as the back of a chair

*Do not perform this if the patient is coughing, speaking*



*Figure: Showing patient positioning while performing Heimlich Manoeuvre*



- Stand behind the person. Place one foot slightly in front of the other for balance. Wrap your arms around the waist. Tip the person forward slightly. If a child is choking, kneel down behind the child.
- Make a fist with one hand. Position it slightly above the person's navel.
- Grasp the fist with the other hand. Press hard into the abdomen with a quick, upward thrust — as if trying to lift the person up.
- Perform between six and 10 abdominal thrusts until the blockage is dislodged.

#### **IV. Tests to check for the patency of the nose:**

Two clinical procedures can be carried out for assessing the patency of the nose:

##### **a) Spatula Test:**



- Place a tongue depressor/spatula below the nostril of the patient (as shown in the figure above)
- Ask the patient to blow through his nose and compare the area of mist formation from both the sides
- In normal cases, the areas of mist formation under both the nostrils are equal

##### **b) Cotton-wool test:**

Hold a fluff of cotton against each nostril and observe its movements when the patient inhales/exhales. In case of nasal obstruction due to polyp/septum deviation, the movement of the cotton fluff on that side would be reduced.

#### **V. Ear wax removal:**

Various techniques are used for the removal of ear wax from the ear canal. Steps to be followed for removal of Ear Wax using syringing are as follows:

- Make the patient sit on a chair, such that the affected ear is facing you
- Pull the pinna gently upwards and backwards to straighten the external ear canal and enable better visualisation (in younger children, pull the pinna gently downwards and backwards)



Manual Syringing Equipment



Direction of water jet while syringing

- iii. Place a kidney-shaped dish under the ear to collect the water overflow
- iv. Fill a large (e.g. 20ml) syringe with a firmly attached metal or plastic cannula with lukewarm water
- v. Direct the jet of water backward and upward and not directly at the tympanic membrane. Several syringes full of water may be required before the wax is cleared
- vi. Intermittently inspect the canal
- vii. Inspect the expelled water for evidence of wax

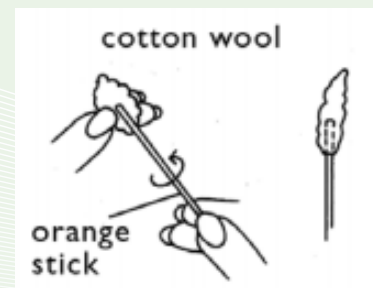
It is important to ensure that the water is at body temperature (37 °C); otherwise discomfort and vertigo may be induced by stimulation of the labyrinth (caloric effect)

### VII. Dry Mopping:

- Only clean their ears with a dry mop when the ear is discharging.
- When the ear is dry it must not be cleaned with a dry mop.
- A dry mop is not the same as a 'cotton bud'
- 'Cotton buds' must never be used to clean ear canals as they are too big and the cotton wool is wound onto the stick too tightly

### VIII. How to make a dry mop:

- Wash your hands with soap and water – air dry.
- Pull off a small piece of cotton wool.
- Gently pull it out into an oval shape.



- Put the tip of the stick into the centre of the cotton wool.
- Twist the stick round and round with one hand whilst holding half of the cotton wool tightly against the stick with the thumb and index of your other hand.
- Half of the cotton wool should extend from the end of the stick and form a fluffy, soft tip.
- The rolled-up piece of cotton wool should be long enough so that when the soft tip is deep in the ear canal and next to the eardrum there is still some cotton wool sticking out of the ear canal.
- This is so that you can hold onto the cotton wool and ensure that the cotton wool comes out of the ear canal.
- After completing dry mopping, wash your hands again.

#### **IX. How to make a wick:**

- Make a wick by rolling the cloth or the tissue paper into a pointed shape.
- Gently pull the pinna away from the head. This helps straighten the ear canal.
- Place the wick into the ear canal. It will absorb any discharge or blood in the ear canal.
- Leave it in place until it is wet.
- Remove the wet wick and inspect it. Is there pus on the wick?
- Replace with a clean wick.
- Repeat until the wick stays dry.

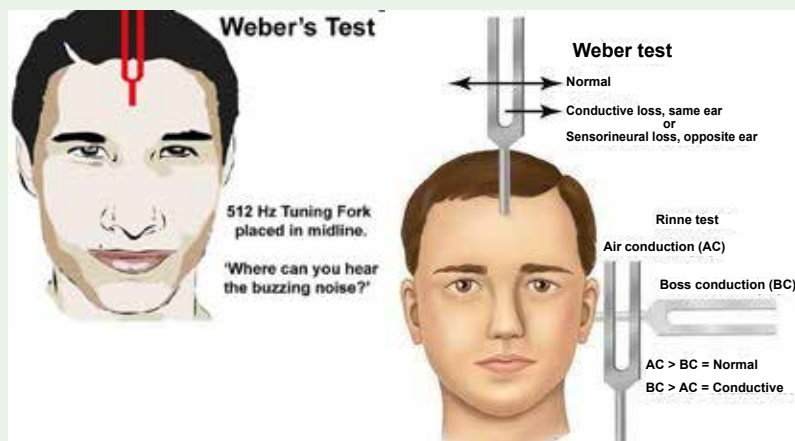
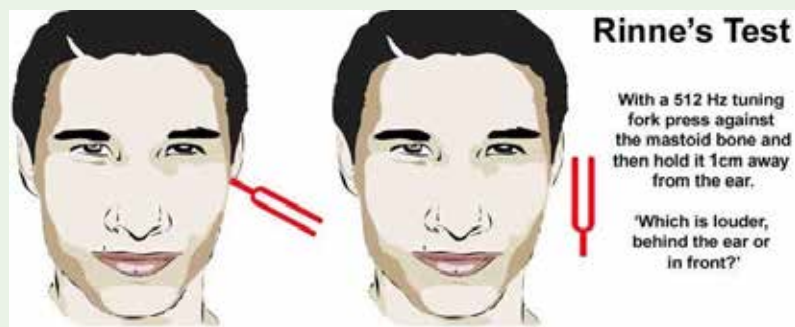


#### **X. Performing the tuning fork tests:**

As you may be aware, hearing loss may be of 2 types – Conductive Hearing Loss and Sensorineural Hearing Loss. Using the tuning forks, Rinne and Weber Test are the two simple clinical tests which can be performed to establish the presence or absence of a significant conductive hearing loss.

The steps to perform these tests:

- Make the patient sit upright on a chair, looking forwards
- Use a tuning fork on 512 Hz.
- Hold the tuning fork by its stem and strike one side of the tines on a padded surface or the ball of hand. Do not strike it on a hard surface as this may damage the tuning fork



#### a. The Weber Test:

As shown in the image above, after striking the tuning fork, the footplate is placed on the patient's forehead. Hold the tuning fork in place for at least 4 seconds and ask on which side the sound was heard better.

#### Interpretation:

- Normal cases: the sound is heard equally well in both the ears
- Conductive deafness: the sound heard is better in the affected ear
- Sensorineural deafness: the sound heard is lower in the affected ear

#### b. The Rinne's Test:

After striking the tuning fork, hold the tines of the tuning fork approximately 25mm from the ear canal entrance. Hold the tuning fork there for about 2 seconds. Without any interruption and without touching the tines press the footplate firmly against the mastoid. Hold the tuning fork in place for another 2 seconds. Ask the patient when the sound heard was better.

#### Interpretation:

- Normal cases and in sensorineural hearing loss: Sound is louder when the tuning fork is held near the ear canal
- Conductive hearing loss: Sound heard is louder when the tuning fork is placed at the mastoid



## Annexure 2 : Commonly Used ENT Medicines

### 1. Normal Saline nasal drops – Sodium chloride (0.5% w/v):

*Use:* It is used in cases of rhino-sinusitis, rhinitis co-existing with nasal polyps, post nasal surgeries. It helps in ridding the nose of allergens, mucus and crusting

*Dose:* 2 drops in each nostril, 2-3 times a day

### 2. Xylometazoline 0.1% nasal drops:

*Use:* Used for relief from nasal congestion caused by conditions such as common cold, sinusitis and allergies. It works by narrowing the blood vessels in the nose area, reducing swelling and congestion.

*Dose:* 2-3 drops in each nostril 2 times a day (not to be used consecutively for more than 7 days)

*Side effects:* Temporary burning, stinging, dryness in the nose, runny nose, and sneezing may occur. Rare side effect: Allergic reactions

### 3. Wax solvent ear drops:

*Use:* These drops are used to treat earwax build up in the ear. It helps to soften, loosen, and remove the earwax. This medication releases oxygen and starts to foam when it comes in contact with skin. The foaming helps break up and remove the earwax.

*Dose:* 4-5 drops in each ear, once a day. The patient must lie down for at least 15-30 minutes. It may be repeated after a week if no relief.

*Side effects:* A foaming or crackling sound in the ear after using the ear drops; temporary decrease in hearing after using the drops; mild feeling of fullness in the ear; mild itching inside the ear.

### 4. Cetirizine syrup/tablets

*Use:* Cetirizine belongs to the Antihistamines class of medicines. They are used to relieve the symptoms of allergic inflammation of the nasal airways due to allergens. This medicine works by blocking the action of an allergic substance in the body known as histamine.

*Dose:* The usual adult dose is 5-10 mg once a day

*Side effects:* Common side effects of cetirizine include Dizziness, Drowsiness, Tired feeling, Dry mouth, etc.



## 5. **Boro spirit ear drops**

*Use:* Boro spirit ear drops contain Alcohol and Boric Acid as active ingredients. They possess an antiseptic, antifungal and antibacterial action and hence used for ear infections such as otitis externa or in cases with trauma/boil in the ear canal causing pain. It works by stopping the growth of bacteria and fungus.

*Dose:* 2 drops in the affected ear 2 times a day

*Side effects:* Side effects occur less commonly. Some of the side effects include- headache, drowsiness, fainting, vomiting, etc.

## 6. **Amoxicillin – Syrup/tablets**

*Use:* Amoxicillin belongs to a class of drugs called penicillin. It works by killing bacteria and stopping its growth in your body. As this antibiotic treats only bacterial infections, it is ineffective for viral infections (such as common cold, flu). This drug may be used alone or in combination with Clavulanic Acid, which increases its efficacy, for common ENT indications such as Acute Otitis Media, acute mastoiditis, acute bacterial rhinosinusitis, tonsillitis, peritonsillar abscess, etc.

*Adult Dose:* 500mg, thrice a day (when used in combination with clavulanic acid dose is 625 mg, twice a day)

*Side effects:* Nausea, vomiting, diarrhoea, and rash

## 7. **Combo ear drops (Chloramphenicol + Clotrimazole + Lignocaine hydrochloride)**

*Use:* these ear drops having a combination of a broad-spectrum Antibiotic, Antifungal and local anaesthetic, can be used to treat a variety of ear infections such as otitis media/externa, otomycosis, etc.

*Dose:* 4-5 drops in the affected ear, 3-4 times a day

*Side effects:* Itching in the ear, mild stinging/burning sensation, dermatitis, etc.

## 8. **Liquid paraffin – menthol drops**

*Use:* It is used as a nasal decongestant

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## Namaste!

You are a valuable member of the Ayushman Bharat – Health and Wellness Centre (AB-HWC) team committed to delivering quality comprehensive primary healthcare services to the people of the country.

To reach out to community members about the services at AB-HWCs, do connect to the following social media handles:



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